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ORIGINAL COMMUNICATIONS.

PURULENT OPHTHALMIA OF ARMIES.

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Comparatively few members of the profession in this country have acquired extensive experience in the practice of Military Surgery, and, probably, for this reason our medical writers have contributed little to enrich the literature of this branch of our science. Until very recently scarcely a single valuable work upon the subject had been produced by an American author.

Although the works recently published will undoubtedly be of great benefit to surgeons so suddenly called without previous experience in camp life, to watch over the health of our soldiers and treat the diseases and injuries peculiar to them, we apprehend neither the present nor the future wants of the military surgeon will be wholly supplied by these manuals. They have evidently been hastily prepared for the

sudden emergencies in which the surgeons of our volunteer regiments are placed, and are undoubtedly, under the circumstances, as comprehensive as could have been expected. The great increase in the number of soldiers, however, which the necessities of the country may for some time require, will but too soon, we fear, furnish an extensive field of observation and practice, which will enable our military surgeons to supply, if they choose, this deficiency in American medical literature.

Among the subjects which have been neglected in the treatises already published, we would mention "Ophthalmie Militarii" or "Purulent Ophthalmia of Armies." And yet this is one of the most important matters to which the attention of the military surgeon can be directed. Any one who is acquainted with certain facts in the history of military hygiene in the European armies during the past seventy years, must be convinced of the truth of this statement. For these facts we would refer to the various standard works on Diseases of the Eye, especially that of Lawrence, and several excellent monographs published on the continent of Europe.

It is reported officially that in the year 1830, one-eighth of the Belgian army was disabled with this disease, and in 1840 there were 5000 cases in the army consisting of 50,000 men. More than *one hundred thousand* cases had been reported in the Belgian army since the first appearance of the disease. In some regiments more than one-half of the soldiers were affected.

Within the space of eight years 30,000 cases occurred in the Prussian army.

In the year 1812, 1500 cases occurred in the garrison of Ancona.

From the reports of two English hospitals, it appears that in Dec., 1810, 2317 soldiers were a burden to the public from blindness produced by ophthalmia, and that a large number in addition had lost one eye.

Dr. Vetch informs us that in the 2d battalion of the 52d,

numbering about 700 men, 636 cases of purulent ophthalmia occurred in one year.

Assalini states that two-thirds of the French army were affected at one time.

Official reports abound in accounts of the ravages of this terrible disease in hospitals, in fortresses, on board ship and in schools; but we need not multiply examples.

Well might the subject have deeply interested the European governments when so large a proportion of their soldiers were disabled, and, in too many instances, thrown upon public charity, blind and dependant for life. In view of the disastrous effects of this disease, several governments offered prizes for the best essays upon the subject, and appointed at different times boards of commissioners, composed of the most experienced Ophthalmologists, to investigate its causes, treatment and prevention.

We see little reason for supposing our own armies will not suffer to a greater or less extent from this evil. There will probably be for months, if not for years, not less than 400,000 troops in the armies of the Federal Government. From exposure, improper food and insufficient dress, evils incident to military operations, these men will be peculiarly liable to nearly every form of disease.

As is well known by experienced physicians, who have practised in the South and West, Ophthalmia is often epidemic in certain localities, in which portions of our army will be in active service. It should be remembered by the military surgeon, that whenever even a single soldier in a regiment is affected with this disease, it is almost inevitably communicated by contagion to his comrades. This takes place not only by direct contact through carelessness in the use of towels and general neglect as regards habits of cleanliness, but also, as some writers believe, by the influence of the atmosphere of tents and barracks impregnated with particles of purulent matter.

We may seem to our readers inclined to seek danger and

trouble where none exist. The remarkable facts, however, in the history of European armies, above given, certainly show that there are good grounds for fear. An intelligent surgeon of this State has lately informed us that several cases of severe Ophthalmia have already appeared in the regiment under his charge.

Upon the care and skill of our surgeons in treating Purulent Ophthalmia, will depend, we believe, the services of a large number of our soldiers. Upon this same care and skill will depend whether those soldiers affected with this disease shall be restored to health or returned home blind and dependent upon friends or the public for support. As a matter of public economy, to say nothing of humanity, every effort should be made to preserve the health and thereby the efficiency of the army, but also to reduce the present expense of maintaining a large number of invalids and the future expense of supporting the blind; the Government should therefore endeavor to appoint such surgeons only as are in all respects competent to fill so important positions.

It is not our present purpose to attempt to supply any deficiency on the particular point in question which may occur in our works on Military Surgery. We propose at some future time to offer the readers of the JOURNAL, if desired, a paper on Conjunctivitis as it prevails in the Northwest. We have been much interested for the past few years in collecting facts relative to this troublesome disease, which we trust will not prove wholly uninteresting to the profession at large.

We wish, however, to offer a single suggestion, which we consider of much practical value in reference to the mode of applying strong caustic solutions to the eye in the early stages of Purulent or Catarahal Ophthlmia. We are fully convinced that many physicians often fail to cut short these diseases by applying solutions of insufficient strength and also do direct injury by improper modes of applying the stronger solutions. In a large proportion of uncomplicated cases, when the inflammation is confined principally to the palpebral conjunctiva,

rendering them highly vascular and œdematous, we consider the use of solutions of argenti nitras, varying in strength from ℈j ℈ij or even ℈iiss to the ounce of water, as most reliable, *provided they are properly applied.* We never drop such collyria under the lids, for, thus introduced, they are to a certain extent neutralized by the salts of the secretions and prevented from passing equally over the whole surface of the conjunctiva by the spasmodic contraction of the lids.

To the conjunctiva of both lids exposed as much as possible by inverting the upper lid and drawing down the lower lid, we first press gently a piece of dry linen for the purpose of removing all moisture and mucous. Upon the whole surface thus prepared we paint some one of the solutions above mentioned by means of a large but short camel's hair, *thoroughly moistened* in the solution and yet *not saturated* with it. The brush should be passed freely over the surface till the whole conjunctiva presents the characteristic white appearance produced by Argenti Nitras, after which the moisture should be again removed with the linen and the lids returned to their natural position. One application of this kind a day is usually sufficient. The stronger the solution, the less freely it should be applied to the inflamed surface.

We have followed this method with such good results in so many cases that we would recommend it to all who have never tried it, where strong caustic solutions are indicated.

In conclusion, we would again urge upon our Military Surgeons the careful consideration of this subject. We would remind them of the necessity of prompt treatment in the very earliest stages of the disease, and of immediate isolation of affected soldiers.

A new field of observation is undoubtedly open to members of our profession, and whoever will collect the most reliable facts regarding the causes, progress and treatment of Ophthalmia as found in our armies, will perform an important work for the profession and secure for himself an enviable reputation.

CASE OF AMPUTATION.

Henry Euslin, a resident of Iroquois, Ill., aged 66 years, and of scrofulous habit, received an injury of the left ankle joint jumping from a carriage. The foot and ankle become swollen and painful. Domestic remedies were used for nearly two months, when a large sloughing ulcer presented at the heel. A physician was now called and constitutional treatment brought to bear on the sore heel, but without relief.

I visited the patient for the first time in February, 1861. I found him emaciated, having diarrhœa, and suffering considerable pain. The foot and ankle were studded with fistulous openings discharging offensive matter; the tendoachillis, muscles of the heel, and posterior ligaments of the ankle joint were completely destroyed, leaving the os-calcis, tibia and fibula exposed. I spoke of amputation as the only chance for relief, but did not recommend it, owing to the exhausted condition of the patient.

March 2—Visited the patient in company with Drs. Barry, Fowler and Dunn. After stating to the patient and family, the certainty of death without, and the chance of recovery with, an operation, consent was given and the operation performed. Chloroform was given as an anæsthetic, and the limb amputated in its upper third just below the tuberosity of the tibia. The usual dressings were applied, and brandy and opium given during the remainder of the day and night.

March 5—The patient has rested very well since the operation; no pain in the stump; pulse 80; the flaps of the wound lying against each other without any adhesion, or evidence of inflammation. Ordered, in addition to brandy and opium, quinine and beef-tea.

March 6—Pulse 80; suppuration of the stump; discharging unhealthy pus. Ordered the stump washed with tinct-myrrh and covered with pulv. charcoal.

March 9—Patient exhibits signs of exhaustion; the surface covered with cold perspiration, and the wound discharging a large amount of offensive matter; the extremity of the tibia is exposed. Continue the same treatment, with increase of brandy.

March 12—Patient thirsty, skin hot, pulse 90; the stump inflamed and painful for the first time since the operation.

March 15—The discharge from the stump is considerably diminished, and there is some appearance of healthy granulation. Continue the same local and constitutional treatment as before.

April 15—The daily notes of the case since March 15th contain nothing of interest or importance. The wound, owing to the impaired condition of the system, healed slowly. The patient is improving in general health, and the wound is nearly cicatrised.

The above case, I think, is one of interest, considering the advanced age and extreme debility of the patient at the time of the operation. I do not offer it, however, as an anomaly; but, from the fact that I have been censured (for operating) by a few meddlesome people, some of whom claim to belong to the Medical Profession.

L. B. BROWN, M. D., Iroquois, Ill.

SELECTED.

DIRECTIONS TO ARMY SURGEONS ON THE FIELD OF BATTLE.

BY G. J. GUTHRIE,

Surgeon-General to the British Forces during the Crimean War.

[From his Pamphlet on the Hospital Brigade.]

1. Water being of the utmost importance to wounded men, care should be taken when before the enemy, not only that the barrels attached to the conveyance-carts are properly filled with good water, but that skins for holding water, or such other means as are commonly used in the country for carrying it, should be procured and duly filled.

2. Bandages or rollers, applied on the field of battle are, in general, so many things wasted, as they become dirty and stiff, and are usually cut away and destroyed, without having been really useful; they are therefore not forthcoming when required, and would be of no use.

3. Simple gun-shot wounds require nothing more, for the first two or three days, than the application of a piece of wet or oiled linen, fastened on with a strip of sticking-plaster, or, if possible, kept constantly wet and cold with water. When cold disagrees, warm water should be substituted.

4. Wounds made by swords, sabres, or other sharp-cutting instruments, are to be treated principally by position. Thus, a cut down to the bone, across the thick part of the arm, immediately below the shoulder is to be treated by raising the arm to or above right angle with the body, in which position it is to be retained, however inconvenient it may be. Ligatures may be inserted, but through the skin only. If the throat be cut across in front, any great vessels should be tied, and the oozing stopped by a sponge. After a few hours, when the oozing is arrested, the sponge should be removed, and the head brought down towards the chest, and retained in that position without ligatures; if this is done too soon, the sufferer may possibly be suffocated by the infiltration of blood into the areolar tissue of the parts adjacent.

5. If the cavity of the chest is opened into by a sword or lance, it is of the utmost importance that the wound in the skin should be effectively closed, and this can only be done by sewing it up as a tailor or a lady would sew up a seam, skin only being included; a compress of list should be applied over the stitches, fastened on by sticking plaster. The patient is then to be placed on the wounded side, that the lung may fall down, if it can, upon, or apply itself to the wounded part, and adhere to it, by which happy and hoped-for accident life will in all probability be preserved. If the lung should be seen protruding in the wound, it should not be returned beyond the level of the ribs, but be covered over by the external parts.

6. It is advisable to encourage previously the discharge of blood from the cavity of the chest, if any have fallen into it; but if the bleeding from within should continue, so as to place the life of the sufferer in danger, the external wound should be closed, and events awaited.

7. When it is doubtful whether the bleeding proceeds from the cavity of the chest, or from the intercostal artery (a surgical bugbear), an incision through the skin and the external intercostal muscle will expose the artery close to the edge of the rib having the internal intercostal muscle behind it. The vessel thus exposed may be tied, or the end pinched by the forceps, until it ceases to bleed. Tying a string round the ribs is a destructive piece of cruelty, and the plugs, &c., formerly recommended, may be considered as surgical incongruities.

8. A gun-shot wound in the chest cannot close by adhesion, and must remain open. The position of the sufferer should therefore be that which is most comfortable to him. A small hole penetrating the cavity is more dangerous than a large one, and the wound is less dangerous if the ball goes through the body. The wounds should be examined and enlarged, if necessary, in order to remove all extraneous substances, even if they should be seen to stick on the surface of the lung if the opening should be covered with soft oiled or wet lint—a bandage when agreeable. The ear of the surgeon and the stethoscope are invaluable aids, and ought always to be in use; indeed, no injury of the chest can be scientifically treated without them.

9. Incised and gun-shot wounds of the abdomen are to be treated in *nearly* a similar manner; the position in both being that which is most agreeable to the patient, the parts being relaxed.

11. In wounds of the bladder, an elastic catheter is generally necessary. If it cannot be passed an opening should be made in the perinæum for the evacuation of the urine, with as little delay as possible.

12. In gun-shot fractures of the skull, the loose broken pieces of bone, and all extraneous substances, are to be removed as soon as possible, and depressed fractures of bone are to be raised. A deep cut made by a heavy sword through the bone into the brain, generally causes a considerable depression of the inner table of the bone, whilst the outer may appear to be merely divided.

13. An arm is rarely to be amputated, except from the effects of a cannon-shot. The head of the bone is to be sawn off, if necessary. The elbow-joint is to be cut out, if destroyed, and the sufferer, in either case, may have a very useful arm.

14. In a case of gun-shot fracture of the upper arm, in which the bone is much splintered, incisions are to be made, for the removal of all the broken pieces which it is feasible to take away. The elbow is to be supported. The forearm is to be treated in a similar manner; the splints used should be solid.

15. The hand is never to be amputated, unless all or nearly all its parts are destroyed. Different bones of it and of the wrist are to be removed when irrecoverably injured, with or without the metacarpal bones and fingers or the thumb; but a thumb and one finger should always be preserved when possible.

16. The head of the thigh bone should be sawn off when broken by a musket-ball. Amputation at the hip-joint should only be done when the fracture extends some distance into the shaft, or the limb is destroyed by cannon-shot.

17. The knee-joint should be cut out when irrecoverably injured; but the limb is not to be amputated until it cannot be avoided.

18. A gun-shot fracture of the middle of the thigh, attended by great splintering, is a case for amputation. In less difficult cases, the splinters should be removed by incisions, particularly when they can be made on the upper and outer side of the thigh. The line should be placed on a straight, firm splint. A broken thigh does not admit of much, and sometimes of no extension, without an unadvisable increase of suffering. An inch or two of shortening in the thigh does not so materially interfere with progression as to make the sufferer regret having escaped amputation.

19. A leg injured below the knee should rarely be amputated in the first instance, unless from the effects of a cannon-shot. The splinters of bone are all to be immediately removed, by saw or forceps, after due incisions. The limb should be placed in iron splints, and hung on a permanent frame, as affording the greatest comfort, and probable chance of ultimate success.

20. An ankle-joint is to be cut out, unless the tendons around are too much injured, and so are the tarsal and metatarsal bones and toes. Incisions have hitherto been too little employed in the early treatment of these injuries of the foot for the removal of extraneous substances.

21. A wound of the principal artery of the thigh, in addition to a gun-shot fracture, renders immediate amputation necessary. In *no other part* of the body is amputation to be done in the first instance for such injury. Ligatures are to be placed on the wounded artery, one above, the other below the wound, and events awaited.

22. The occurrence of mortification in any of these cases will be known by the change of color in the skin. It will rarely occur in the upper extremity, but will frequently do so in the lower. When about to take place, the color of the skin of the foot changes, from the natural flesh color to a tallowy or mottled white. Amputation should be performed immediately above the fractured part. The mortification is yet local.

23. When this discoloration has not been observed, and the part shrinks, or gangrene has set in with more marked appearances, but yet seems to have *stopped* at the ankle, delay is, perhaps, admissible, but if it should again spread, or its cessation be doubtful, amputation should take place forthwith, although under less favorable circumstances. The mortification is becoming, or has become constitutional.

24. Bleeding, to the loss of life, is not a common occurrence in gun-shot wounds, although many do bleed considerably, seldom, however, requiring the application of a tourniquet as a matter of necessity although frequently as one of precaution.

25. When the great artery of the thigh is wounded (not torn across), the bone being *uninjured*, the sufferer will probably bleed to death, unless aid be afforded, by making compression above, and on the bleeding part. A long, but not broad stone, tied sharply on with a handkerchief, will often suffice until assistance can be obtained, when both ends of the divided or wounded artery are to be secured by ligatures.

26. The upper end of the great artery of the thigh bleeds scarlet blood, the lower and dark venous-colored blood; and this is not departed from in a case of accidental injury, unless there have been previous disease in the limb. A knowledge of this fact or circumstance, which continues for several days, will prevent a mistake at the moment of injury, and at a subsequent period, if secondary hæmorrhage should occur. In the *upper* extremity both ends of the principal artery bleed scarlet blood, from the free collateral circulation, and from the anastomoses in the hand.

27. From this cause, mortification rarely takes place after a wound of the principal artery of the arm, or even of the arm-pit. It *frequently* follows a wound of the principal artery in the upper, middle, or even lower parts of the thigh, rendering amputation neccessary.

28. It is a great question, when the bone is *uninjured*, where, and at what part, the amputation should be performed. Mortification of the foot and leg, from such a wound, is disposed to stop a little below the knee, if it should not destroy the sufferer; and the operation, if done in the first instance, as soon as the tallowy or mottled appearance of the foot is observed, should be done at that part; the wound of the artery, and the operation for securing the vessel above and below the wound, being left unheeded. By this proceeding when successful the knee-joint is saved, whilst an amputation above the middle of the thigh is always very doubtful in its result.

29. When mortification has taken place from any cause, and has been arrested below the knee, and the dead parts show some sign of separation, it is usual to amputate above the knee. By not doing it, but by gradually separating and removing the dead parts, under the use of disinfecting medicaments and fresh air, a good stump may be ultimately made, the knee-joint and life being preserved, which latter is frequently lost after amputation under such circumstances.

30. Hospital gangrene, when it unfortunately occurs, should be considered to be contagious and infectious, and is to be treated locally by destructive remedies, such as nitrid acid, and the bivouacking or encamping of the remainder of the wounded, if it can be effected, or their removal to the open air.

31. Poultices have been very often applied in gun-shot wounds, from laziness, or to cover neglect, and should be used as seldom as possible.

32. Chloroform may be administered in all cases of amputation of the upper extremity and below the knee, and in all

minor operations; which cases may also be deferred, without disadvantage, until the more serious operations are performed.

33. Amputation of the upper and middle parts of the thigh are to be done as soon as possible after the receipt of the injury. The administration of chloroform in them, when there is much prostration, is doubtful, and must be attended to, and observed with great care. The question whether it should or should not be administered in such cases being undecided.

34. If the young surgeon should not feel quite equal to the ready performance of the various operations recommended, many of them requiring great anatomical knowledge and manual dexterity (and it is not to be expected that he should), he should avail himself of every opportunity which may offer of perfecting his knowledge.—*Lancet.*

EFFECTS OF CLIMATE ON NORTHERN AND SOUTHERN CONSTITUTIONS.

Public health is public wealth. This short aphorism has, with the advance of sanitary science, acquired a meaning which political economists of the last century hardly dreamed of. But the preservation of the public health in time of peace is not more important to the State than is the sanitary condition of its armies in time of war. The health of an army is the strength thereof. A recognition of this fact by the Federal Government is apparent in the appointment of a Sanitary Commission, whose duty it shall be to establish a proper surveillance over the troops in camp and in the field, to adopt such measures as will place them in the best condition to resist the influences which affect their health, to see that their food, clothing, &c., are proper and sufficient, and that nothing shall be present to weaken the efficiency of the force from causes affecting the health of our soldiers.

The effects of a Southern climate upon the Northern constitution is a subject which will particularly attract the attention of this Commission. Whatever these effects may be, they can be mitigated in a great measure by the acts of this Commission, the concerted aid of the medical officer of the corps, and the intelligent understanding of the subject by the soldier himself.

Comparing the Northern soldier with the Southern, we believe the former will withstand the effects of the climate for a short campaign of a year or more better than the latter; and though the popular belief is divergent to this view, the statistics of our war with Mexico fully sustain it, and the published opinion of no less an authority than Dr. Nott, of Mobile, in the *Southern Journ. of Med. and Pharmacy*, for January, 1847, confirms it.

The statistics of the Mexican War are so remarkable, that we present them as we find them, given in a recent number of the *Evening Post*:

On April 8th, 1848, the Secretary of War made a report to the United States Senate of the losses of the volunteer forces employed in Mexico. From this, it appears that seven Northern States—Massachusetts, New York, New Jersey, Pennsylvania, Ohio, Indiana and Illinois—furnished, in the course of that war, 22,573 men. Of this force, the total loss from disease was 2,931 men; less than one-eighth of the whole. Nine slave States—Virginia, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Louisiana, Tennessee and Kentucky—furnished 22,899 men. The loss from this force by disease, was 4,315, or more than one-fifth; a very considerable difference in favor of Northern troops.

When we go into particulars, we find that Massachusetts lost, of 1,047 men, but 61 by disease; while South Carolina, furnishing 1,054 men, or seven more than Massachusetts, lost not less than 338 by disease. Mississippi lost 769 men by disease, out of 2,319; while Indiana, furnishing nearly double the number, namely, 4,470, lost only 768. Georgia lost 362 men by disease, out of 2,047, while New York lost but 188 of a total of 2,665. North Carolina sent 936, and lost 233; while New Jersey sent 424, and lost but 12. Pennsylvania sent 2,464, and lost 411; Mississippi lost 769 out of 2,319. Illinois furnished 5,973 men, and lost 850; while Tennessee furnished only 3,011; Arkansas, 136 of a force of 1,323; rather more than ten per cent. in each. Kentucky lost 709 out of 4,800; but Ohio, sending 5,530, lost but 642. The Texan troops, fighting in a country to whose circumstances and climate they were thoroughly accustomed, lost yet more by disease than the Missourians, who came there from the cold North. Of 7,313 men, Texas lost 360 by disease; while of 6,753 Missourians, only 342 were thus lost.—*Am. Med. Monthly.*

GUNSHOT WOUNDS PRODUCED DURING THE LOADING OF ARTILLERY.

Dr. Cortese relates five cases of gunshot wounds received by artillerymen while engaged in loading their guns, and gives the following summary of his observation: 1. No other blow of a projectile imparts like the present so great an amount of commotion to the entire limb. The state of muscular contraction prevailing at the time constitutes a kind of solidarity between the hand, forearm, and arm, which is the chief and necessary cause of this commotion. 2. This circumstance complets the surgeon to direct his attention to the entire limb, whatever amount of lession may be manifest in the hand. A neglect of this precept may lead to gangrene gaining possession of a large portion of the limb, or to a generalized suppuration, while a diminished power of reaction in the injured parts may give rise to purulent infection, or render useless recourse to amputation. 3. In all those cases in which the hand is severely torn, its disarticulation, or even the amputation of the forearm, is insufficient to secure recovery. The surgeon's knife penetrates into infiltrated tissues, more or less destroyed in their intimate structure in consequence of the concussion they have been subjected to. So that independently of the fracture of the bone, and of the possible disjunction of the articulations of the ulna, the success of the reparative process would be very problematical. In such cases the arm should be amputated. 4. The sooner amputation is performed, the greater is the propability of a favorable result. 5. The rapid and very extensive tumefaction of the limb constitutes a sufficiently certain criterion of the severity of the derangements which are propagated along its whole extent. When fractures are not detected in the diaphysis of the bone, some lesion of contiguity or continuity in the ulnar articulation must be suspected. 6. When the lesion does not seem severe enough to call at once for amputation, we must always be prepared for secondary occurrences which will unfit the limb for its functions. (In two of the author's cases, paralysis of the limb remained.) Still, conservative treatment in such cases should be attempted.—*Brit. & For. Med.-Chirurg. Rev.*, April, 1861, from *Omodei Annali Univ. di Med.*, vol. clxxiv.

ON THE ANTAGONISTIC EFFECTS OF OPIUM AND SULPHATE OF QUINIA.

BY NELSON NIVISON. M. D., of Hector, Schuyler County, New York.

That opium and quinia, when administered "simultaneously" as remedies, react upon each other, and to some extent countervail each other, is a fact which appears recently to have arrested the attention of numerous observers. Though we are prepared to admit that in a qualified sense they are "antidotes to each other," each neutralizing the *bad effects* of the other, we cannot subscribe to the rule lately laid down by Dr. Gubler, that "they ought not to be administered simultaneously." *

We claim, on the contrary, that it is precisely in virtue of the fact that these remedies do react upon each other when simultaneously administered, that the happiest therapeutic results are often produced, differing essentially from the action of either.

So true is this, so important the principle involved, so extensive its range of application, so certain and satisfactory the results, that it is believed that few of the recent improvements in practical therapeutics, have added more largely to our resources than that derived from the *combined* action of these remedies.

At the present time, perhaps no two remedies enter more largely into the general therapeutics of this country than the preparations of bark and opium. There is scarcely a disease in which their virtues have not been tested, often by many and able observers. Some of their properties have been determied with a certainty that amounts to absolute demonstration, others have now won the confidence of a majority of the profession, while other claims put forth with equal assurance have as yet failed to secure that confidence which a frequent use would necessarily imply.

Under such circumstances, any investigation which promises clearer light in regard to the properties and remedial effects of agents so powerful as these, can but be a matter of interest

* Journal des Connaissances Med. et Pharmaceutique, Aug. 30, 1858.

not alone to the medical philosopher, but especially to those who assume the practical duties of the healing art.

Before proceeding to the discussion of the conjoint action of opium and quinine, it may be well to notice some of the phenomena produced by their *separate* action.

Perhaps we cannot give the general and more obvious effects of opium better than to quote Dr. Gubler. He says: "Opium carried into the circulation induces a particular excitement, gives volume to the pulse, exalts the temperature, augments the capillary injection of the skin, and excites diaphoresis." To this we may add that while operating thus on all parts of the system it is sometimes directed with peculiar force to the brain, often producing intoxication or delirium. This is usually followed by an agreeable mental placidity, and soon all consciousness is lost in sleep.

With Dr. Gubler, we will say of quinia that its effects on the circulation are inversely to those of opium. It gives tone, or contractility to the capillaries, and thus overcomes congestion. It is anti-periodic and sedative. As incidents of its operation, we have various phenomena which indicate that it often produces great disturbance of the nervous centres.

But no mere outline of this character will give to the inquiring student an adequate idea of either the *modus operandi*, the physiological, or therapeutic effects of these articles.

'Tis the latter only which, on the present occasion, chiefly interest us. And it is only by studying their relation to certain pathological conditions that we shall be likely to arrive at a definite understanding of them.

Of their physiological effects we will simply say that both opium and quinia have a powerful affinity for the nervous system, each impressing it in a manner peculiar to itself and through its agency modifying the action of every organ in the performance of its function. Whether, as has been assumed, opium acts through the cerebro-spinal, and quinia the ganglionic system it is now our purpose to inquire.

That quinia has a powerful affinity for the nervous system we think will hardly be questioned. If any doubt should exist, the fact, we conceive, admits of demonstration. It is a law of the animal economy that no function can be performed without loss of substance. Muscular motion implies a loss of fibrin, and any activity of the brain and nervous system involves a corresponding metamorphosis of their tissues. The waste of nerve-tissue, or, in other words, the activity of

the function of innervation, is easily calculated, being in direct ratio to the sum of the phosphates found in the urine.

From carefully conducted experiments it appears that quinia given in a state of health augments the amount of the phosphates, and consequently increases nervous action.

But it is in morbid states of the nervous system that the more striking effects of quinia are exhibited. Dr. Ranke (*Med. Times and Gazette*, May 30th, 1857,) while conducting a series of experiments for determining the effects of ague and quinia on the urine, ascertained that the paroxysm of fever greatly increased the amount of phosphoric acid. Showing most clearly that the nervous system plays an important part in the paroxysm of ague. Dr. Hammond (*Am. Jour. Med. Sci.*,) found, while experimenting on himself during an attack of intermittent, that, on the day of the first paroxysm, the amount of phosphoric acid found in the urine was 69.18. Next day (intermission), 52.95. Third day (paroxysm), 72.95. Fourth day (intermission), 55.27. On this day, quinia was administered. The next day, being the one for the paroxysm, and when the amount of phosphoric acid, calculating from the average of the preceding days, would have been 71.06, it fell to 56.22—but a trifle above that excreted on the days of intermission.

But rapid disintegration of nerve-tissues is not confined to intermittents. It is usually a prominent element in nearly all the severer forms of fever. The general debility and non-performance of function are, doubtless, due to this cause. Continued experiment led Dr. Hammond to the conclusion that "Quinia has the power to prevent much of this great waste of nerve-material." We will add that it not only prevents destruction of nerve-tissue, but, by its well-known effects on the function of nutrition contributes greatly to the *reparative* process. It may, therefore, be justly entitled a great conservator of the nervous system in conditions of febrile excitement or nervous prostration.

But the influence of quinia is not confined to the nervous system. It has important relations to the circulation, and the character and quality of the blood. Headland believes "that its action is exerted primarily on the blood and not on the nerves." We will not discuss the question on the present occasion, nor is it necssary to our present purpose. All the vital functions are so intimately connected that no one is independent of all the rest.

The more obvious and important effects of quinia will alone be noticed; and among these, none is of so much importance, as its power of giving contractile action to the cappillaries.

This power appears to extend to all parts of the capillary system. Dr. Corrigan, Physician in Ordinary to the Queen in Ireland, says: "Quinia appears to possess the same power in giving contractility to the capillaries in the lungs which we know it possesses in so marked a degree over the capillaries and venous radicles in the spleen."

This property of quinia gives us a power over almost all forms of venous and capillary *congestion* which, perhaps, it is impossible to obtain by any other known agent.

Another effect of quinia on the circulation is that of approximating the frequency of the pulsations to the healthy standard, when much too frequent or much too slow.

We may incidentally mention that quinia enters the blood-vessels, and goes the rounds of the circulation. Tiedeman and Gmelin found it long ago in the blood of a patient to whom it had been administered, and if we needed further confirmation, we have it in the fact that from three to twelve hours after its administration it will appear in the urine. Dr. Bence Jones, M. Briquet, and many other authorities might be quoted on this point.

Quinia not only influences the circulation, but it works important changes in the character of the blood itself. We have already had occasion to notice its influence on the phosphates. Its action in diminishing the amount of uric acid is still more striking. Dr. Ranke experimented on three healthy individuals. He found that under the influence of quinia the amount of uric was reduced nearly one-half. Dr. Hammond made a series of observations during an attack of intermittent fever, where, as in all fevers, the amount of uric acid is always greatly increased. Here, likewise, the quality was promptly reduced more than half by the action of quinia.

But perhaps the most remarkable effect of quinia on the blood is the fact that it *defibrinates* it, and renders it fluid and incoaguable. This fact, mentioned by Dr. Samuel Gordon in the *Dublin Quarterly* for August, 1856, and clearly established by the experiments of Baldwin, Melier, Briquet, and other rerponsible authorities, may throw some light on its action in preventing and overcoming congestion, and subduing many forms of inflammation.

The diseases to which quinia is specially adapted usually contain an important neuropathic element. The innervation may be either deficient, irregular, or excessive; all, however, imply the existence of, or ultimately produce nervous debility. Many derangements of circulation, nutrition, secretion, sensa-

tion, and muscular motion, are included as sequelæ. An example of excessive innervation is manifest in precocious children. The vivacity, intellectual and moral development indicate a degree of nervous activity altogether disproportioned to the restorative or nutritive function. Early decay is the result.

The diseases accompanied with derangement of circulation are attended with general or local congestions. Conspicuous among them are the intermittent, remittent, continued, and pernicious fevers, and many diseases usually regarded inflammatory. Derangements of secretion, excretion, and calorification, follow in the train of disordered circulation, and imply disturbance of the ganglionic system.

Quinia is also adapted to many diseases originating in the cerebro-spinal system, as chorea, neuralgia, &c.

Of the general properties of opium, the "antagonist" of quinia, we shall speak very briefly.

One of the most important properties of opium is that of a general stimulant to the vital powers. Says Mr. Skey, the eminent Surgeon of St. Bartholomew's Hospital: "There is no drug, simple or composite, known to our pharmacologists, that possesses an equal power with opium in giving energy to the capillary system of arteries, of promoting warmth, and thus maintaining an equable balance of the circulation throughout the body."

The property of opium, that of *equalizing the circulation*, is an invaluable one. There is scarcely a pathological condition in which it is not desirable, and without this agent sometimes difficult or impossible to obtain.

Opium not only accelerates the circulation when it is feeble, but it moderates it when excessive. This may appear paradoxical, but we think it admits of a ready solution. The circulation is subservient to innervation. While the nervous system maintains its tone, the disturbing cause must be very considerable or long continued, or the circulation will remain uninfluenced. When in an atonic condition, very slightly irritating or exciting causes will hurry the circulation. We believe a rapid pulse always implies deficient innervation. Opium is a direct stmulant of the nervous system; it supplies for the time being the necessary power of resistance to the nervous centres, the effect of the disturbing cause is neutralized, and the circulation regains it equilibrium.

Another remarkable property of opium is the effect it has over the nutritive or reparative function. We see illustrations

of this in the fact that *old ulcers* which have resisted all other means of treatment will readily heal when the system is brought under the influence of that drug. Its effects on obstinate chancres, senile gangrene, chilblains, &c., are examples in point.

A point that demands a passing notice is the general *derivative* effect of opium. By determining to the surface, internal parts are relieved of undue accumulations. In this way we can often spare the system the irritation and exhaustion that would result from counter-irritants.

We will mention still another point of great practical value, and that is the property which opium possesses of *retarding the too rapid metamorphosis of the tissues.* This enables us to maintain the integrity of the organism in exhausting fevers, wasting discharges, long-continued exposure to cold, or any protracted mental or physical suffering.

The more familiar effects of opium in removing pain, allaying irritation, procuring sleep, &c., we have not space here to notice. Enough has been written, we trust, to render it apparent that a multitude of pathological conditions demand the benefit of its influence. It is not only adapted to the inert condition of the remote vascular system, but it subdues active inflammation, and acts as a true life-sustainer when we are compelled to meet the protracted suffering incident to our frail mortality.

It is obvious that each of these "antagonistic" remedies of Dr. Gubler has a wide range of application. But the question arises: Can the several effects that we have imputed to them be confidently relied on when administered in the several pathological conditions that we have indicated? We readily admit many and various exceptions; but we claim that the number of these exceptional cases will be greatly reduced *when the two remedies are given simultaneously.*

Some of the exigencies demanding a combination of these remedies will now be indicated.

1st. There are many acute inflammatory conditions that will promptly yield to the influence of full doses of opium, where these doses cannot be given without the risk of so far paralyzing the nervous energies as to induce fatal congestions. We have seen that quinia possesses pre-eminently the power of giving contractile action to the capillaries, and thus overcoming congestion; and experience has amply demonstrated that if the proper amount of this be combined with the opium in the class of cases above referred to, as much of the latter

may be administered as may be requisite to produce the effect desired.

2d. A frequent objection to the free use of opium is its tendency to so far reduce the biliary and renal secretion as to incur the risk of fatal toxæmia. Combined with quinia this tendency is to a great extent counteracted.

3d. Opium frequently reduces the respiratory action to such an extent that we are liable to have all the evils incident to imperfectly aerated blood. If, under these circumstances, we invoke the "antagonistic" effects of quinia, these unpleasant consequences are usually averted, while all the desirable effects of the opiate are retained.

4th. The *after effects* of opium are frequently so unpleasant as to neutralize or perhaps overbalance all the good that would otherwise result. These usually do not appear when the remedy is administered in combination with quinia.

5th. In many cases of extreme exhaustion, such as follows protracted hemorrhages and other like debilitating causes, we can temporarily arouse the energies of the system by the free use of opium; it is in fact the sheet-anchor; often the only hope. When the sensibilities of the system are thus reduced, the toleration of the drug is often truly astonishing. Under these circumstances, however, it not unfrequently happens that the quantity which is barely sufficient to produce the reaction is yet sufficient when it *does* occur to produce unpleasant narcotism. If in these cases we give quinia with the opium, we not only secure the desired action with a less amount of opium, but the more protracted operation of the quinia will enable us to maintain the reaction for any desired length of time without those frequent repetitions of the opium that would otherwise be necessary.

We may mention in this connection that persons who from accident or design have taken *overdoses* of opium and are found in a state of narcotism, are often promptly aroused by the administration of a full dose of quinia. This is especially the case in young children, who usually tolerate opiates very badly.

6th. Many patients from idiosyncrasy cannot take opium. When given in combination with quinia a large proportion of these persons take it without inconvenience.

We might multiply these examples were it necessary; but if we are thus far correct, quinia is a valuable adjuvant and often corrects the unpleasant effects of opium.

It may perhaps serve to illustrate the foregoing propositions

to state that other agents than quinia, as the peculiar mental condition of lunacy, the continced effect of cold, &c., will sometimes neutralize the bad effects of opium without impairing the good ones. Mr. Skey being obliged to ride all night in December when he had forgotten his overcoat, says: "After riding ten miles I took twenty-five drops of laudanum, and rode the remainder of the night without inconvenience." He says, it may be asked "What was the effect on the following day?" and replies, "None whatever. The cold and the opium mutually balanced each other; there could be no reaction, for the duration of the cold exceeded that of the opium."

I am inclined to think the action of the quinia in this regard analogous to that of cold. The duration of its action generally exceeds that of the opium, thus supporting the system till the effects of the opium shall have passed away.

On the other hand, certain well-known effects of *quinia* are often desirable where, from peculiarity of circumstances, we either cannot obtain them, or, doing so, we bring with them such an undesirable train of concomitauts that we are forced to dispense with the article altogether. We will notice a few of these peculiarities very briefly.

1st. The prominent feature of many diseases is dangerous *congestion* of some internal organ or organs. Here the well known action of quinia in giving contractility to the capillaries of congested parts is exceedingly desirable; but where, on trial of the remedy, we find we have imparted only a peculiar *excited* action to the general circulation, under the influence of which the congestion is aggravated rather than relieved. The addition of a sufficient amount of opium to control this excitement will not only insure the legitimate operation of the quinia on the capillaries, but by diverting the general circulation to the surface, aids still further in overcoming the congestion. In this class of cases either opium or quinia acting alone would almost certainly add to the existing congestion; *in combination* the bad effects are neutralized, and the two remedies co-operate in producing the desired relief.

2. There are many forms of *inflammation* to which, *mutatis mutandis*, the above remarks will apply with equal force. Judicious combinations of the remedies in question will often give us the most perfect control of the vital forces, and enables us to fulfil the various indications in the most satisfactory manner. There are many points of interest involved in this branch of our subject, in the discussion of which the limits of

our article forbid us to enter. (For much that is valuable on the points here involved we refer to the *Dublin Hospital Gazette* for July, 1856, and the *Dublin Quarterly* for August of the same year.)

3d. There is another great class of diseases in the treatment of which quinia is almost indispensable. I allude to the idopathic fevers. Here also we are liable to have various disturbing symptoms demanding the use of opiates. Experience has demonstrated that they may be combined with quinia with the most beneficial results.

4th. There are various affections usually denominated neuralgic, which are palliated by opiates and sometimes *cured* with quinia. These cases will often yield more speedily to the *combined* influence of opium and quinia than to any other known remedies.

5th. There are numerous morbid conditions belonging to the *neuroses*, often associated with anemic states of the system where the true etiology of the disease can doubtless be traced to *defective nerve nutrition.* We have already had occasion to notice the action of both opium and quinia in modifying and improving the function of nutrition. In the present state of our knowledge there is nothing that would preclude the idea that this improved nutritive action may extend to the nerve tissue, But whatever the rational, the fact remains that very many of these neuropathic conditions will yield to the combined action of these remedies.

We are forced to the conclusion that opium and quinia are not so far "antagonistic that they should be administered simultaneously," as maintained by Dr. Gubler.—*Am. Jour. Med. Sciences.*

DR. DAVID SKAE'S DEFINITION OF INSANITY.

I had arrived at the conclusion that it was a disease of the brain affecting the mind. I have to complete this definition by saying how it affects the mind. My reply is, that emotions and passions are caused by the *disease*, and not by the motives ordinarily calling into action these emotions—that is *moral* insanity—and that in another class of cases ideas are believed in which have no evidence of their truth; they are neither founded on fact, observation, nor memory, and are such as no sane man would entertain as matters of testimony or observation; they are, in fact, morbid fancies and beliefs—ideas caused and believed in by disease.

To reduce my definition to a brief compass, I would say that *insanity is an* (*apyretic*) *affection of the brain in which emotions, passions, or desires are excited by* DESEASE (*not by motives,*) *or in which* CONCEPTIONS *are mistaken for acts of* PERCEPTION OF MEMORY.

This definition appears to me to comprise everything. The first part of it defines *moral insanity*, in which the propensities, emotions, and desires alone are *morbidly* excited; and the second part of it defines *intellectual insanity*, in which there are actual delusions or hallucinations, so long considered the essential feature of madness. If I would add anything to this definition, it would be the *loss of self-control* or *self-direction*, which appears to me to be the peculiar characteristic of all forms of insanity,—that loss of self-control over the actions, which permits them to be restless, violent, or extravagant; a loss of control over the passions, which permits them to overrule the judgment and the conscience, and ends in acts of vice, debasement or violence; a loss of control over the succession of the thoughts, which permits them to be incessant, rapid, and incoherent; a loss of control over the ideas, which precludes the insane from the exercise of comparison and judgment, and leaves them (as D. Stewart remarked), like persons in dreams, to mistake the objects of reverie or imagination for realities. In fact, I know of no designation for insanity which more briefly and correctly distinguishes it than the old Scotch one, namely, a man who has *lost his judgment.—Edin. Med. Journal, April*, 1861.

PUERPERAL INSANITY.

[We extract the concluding pages of a very valuable article, too lengthy for our space, in the July No. of the Am. Jour. of Insanity from the pen of Dr. J. H. Worthington.—*Ed.*]

The prevention of puerperal insanity will consist in placing the female under the most favorable hygienic influences which her circumstances will allow. Care should be taken to guard against every source of exhaustion. It ought to be remembered that the discharge from an extensive surface, like that of the interior of the uterus after parturition, cannot fail to reduce the strength of the patient. Her diet, therefore, while it is unstimulating should be nutricious. In her susceptible condition, she should be guarded from all excitement, such as unnecessary visits and conversation, and kept as much as possible out of the reach of anxiety and other painful emotions. Errors of regimen, such as exposure to cold, and indulgence in improper articles of diet, should be avoided. During inaction, if symptoms of anemia should be manifested the infant should at once be weaned, care being taken to avoid the distension of the breasts with the lacteal secretion, and the formation of abscesses. The return of menstruation should be carefully watched, and especial care taken to avoid every exposure until the function is re-established.

In puerperal as in ordinary insanity, so little is positively known of the anatomical lessions which characterize the disease, that in forming a judgment of its nature we are obliged to depend on our knowledge of its causes, and the circumstances under which it most commonly originates, rather than upon the structural changes it produces. The data furnished by morbid anatomy are almost entirely of a negative character; autopsies in the fatal cases having generally failed to show any positive evidence of inflammatory action. It is true that the recent researches of Dr. Calmeil have led him to conclude that acute delirium, which so frequently supervenes in fatal cases of puerperal insanity, is an inflammatory discolor of the cortical cerebral substance; yet he considers it an inflammation which is generally, if not always, met with in exhausted conditions of the system, and can not be treated by active, antiphlogistic measures. In regard to the nature of the affection, Dr. Macdonald remarks:

"When insanity occurs during the puerperal state we would expect to find the disease one of irritation rather than of inflammation; for it is admitted by all that the susceptibility of the female is never greater than during this period. She has been exhausted by uterogestation, while from the growth of the fœtus she has required more nourishment than usual; the irritability of her stomach has perhaps prevented her from using her accustomed quantity of food; she has been debarred from exercise in the open air, that preserver of life and health, and has been worn down by the doubts, and fears, and anxieties that are so apt to hang over the minds of women under these circumstances. In this state we would not look for inflammation; nevertheless we may sometimes meet with it, as we do with pneumonia in typhus, or after severe injuries or surgical operations, where there has been great loss of blood and strength. But it is not that active, vigorous inflammation which occurs in strong individuals. It is an inflammation which, judicious practitioners tell us, is often more successfully treated by stimulants in conjunction with other remedies. When it occurs during location we would expect to find a disease of debility, and we do find the mother pale, emaciated, reduced by suckling a large vigorous child, and by nights of watchfulness and anxiety for her offspring."

Various therapeutic measures have been proposed in the treatment of puerperal mania, among which may be mentioned local or general bloodletting, tartar emetic used as a contra-stimulant, warm baths, purgatives, narcotics, etc. I need not enter into any detail respecting the operation of these remedies. It will be sufficient to say, in regard to *all* depleting measures, that notwithstanding the appearance of energy and vital activity which may be supposed to be manifested by the quick pulse and great muscular strength, often exhibited by patients in a condition of extreme maniacal excitement, experience has proved, in too many instances, the injurious effects of all remedies of this description. In many cases in which, judging from the high grade of the delirium alone, we might be disposed to believe in the existence of inflammation, and consequently to resort to depletion, pain in the head, increased heat of the scalp, general fever, and other signs of inflammation are absent, and so far from being of service, any active depletion will then invariably render the condition of the patient more unfavorable. If, in an exceptional case, or in one in which the diagnosis is doubtful, the pulse should be found full and strong, and the condition of the patient appear

to require depletion, it should be resorted to with the utmost caution, and its effects should be carefully watched.

In the commencement of an attack of puerperal mania, it will generally be necessary to have the patient placed in a room partially shaded, which shall be kept as quiet as possible, and into which no one shall be allowed to enter except the necessary attendants and nurses. A warm bath, continued for one, two or three hours in the evening, will tend to allay nervous irritation, and promote sleep. The bowels should be regulated by simple laxatives, and as there will generally be found a vitiated condition of the mucous membranes, evidenced by a furred tongue and offensive breath, laxatives should be continued daily with small portions of blue mass, until the tongue shows signs of improvement. Some gentle narcotic, of which a combination of asafœtida, hyoscyamus and camphor is a good example, should be given every three or four hours. The diet should be unstimulating but nutritious, and may advantageously consist in great part of new milk, given as frequently as the patient can be induced to take it, or as the stomach will bear it. If the acceleration of the pulse, the dry tongue, and the increase of maniacal excitement should indicate the supervention of acute delirium, the same treatment should be continued, but in these cases great difficulty will generally be experienced in controlling the movements of the patient, and in administering the necessary food and medicine. In this state there is a strong tendency to prostration, under the combined influence of the excessive muscular efforts of the patient, her almost total deprivation of sleep, and obstinate refusal of food. It is absolutely necessary, under these circumstances, to restrain the motions of the patient, by confining her with a bed-strap, by which means her strength will be husbanded, and the entire management of the case will be rendered more easy, and at the same time effectual. It is very important in these cases that the physician should have entire control of the bodily movements of the patient, in order that he may be able to apply warmth to the extremities if it should be needed, and also that he may have it in his power to administer food and drinks in such quantities as are necessary to support the strength of the patient. Under these cardinal points are attended to, but little good can be expected from the exhibition of medicines. In many cases of acute delirium the patients refuse food with such obstinacy that it is impossible, by any ordinary means, to give it in sufficient quantity. The œsophagus tube, which should be small enough

to pass through the nostril, must then be resorted to, and a pint or more of milk, beef-tea, or other liquid nourishment, be injected into the stomach twice daily. If there should be increased heat of the scalp, it may be sometimes removed by warmth to the extremities, or by a dose of laxative medicine, or, if these means fail, by the application of cold to the head. Mustard pediluvia in the evening are always of service, and blisters to the extremities have been found useful as a derivative. It sometimes happens that, with considerable mental anxiety and distress, evidences of cerebral expression will become apparent; the patient is conscious of every thing about her, but appears to labor under difficulty in collecting her thoughts, and in recalling the occurrences of the day. In attempting to do so her mind becomes confused, and the effort fails of its object. With these symptoms of oppression and tendency to coma, I have found, in the absence of fever, the application of a large blister covering the entire scalp to be followed by a decided improvement in the cerebral disorder, and relief to all the symptoms.

CAMP DYSENTERY.

BY C. D. GRISWOLD, M.D., Cleveland, Ohio.

MALARIOUS ORIGIN—PATHOLOGY COMPARED WITH THAT OF MALARIOUS FEVERS—"ABORTIVE" TREATMENT OF DYSENTERY, &C.

Dysentery is the plague of the army. In hot climates it often proves more destructive to the life of the soldier than the enemy's projectiles. It is the foe the commander most dreads to see appear, for no skill in tactics, no advantage in position, or bravery of his forces, avails in the contest. With the appearance of dysentery in an epidemic form, the General is sometimes compelled to resign his command into the hands of the Surgeon, and wait events. It was this disease that decimated the French army so terribly in Egypt, the English armies in India, and our own in Mexico. Wherever large bodies of men are compelled to endure great fatigue during the heat of the day, sleep on the ground at night with only a blanket between them and the earth, and to cover and protect

them from the dew and night air, there dysentery in its epidemic form is almost sure to appear sooner or later. The only other circumstances necessary to make it *certain*, perhaps, are a near approach to the tropics, or within them, and camping on low grounds.

Cause of Dysentery.—Epidemic dysentery, it is believed by many systematic writers, has its origin in malaria. While in charge of the hospital as surgeon of the Panama Railroad Co. at Rujio Saldado, during the construction of that road on the Isthmus, I saw much of this disease, and was led from its behavior to regard it as essentially a malarious disease. During the rainy season, corresponding with our summer, when the men on the works were subject to drenching showers, and would go into their quarters, and perhaps lie down without taking off or changing their clothes, to awake in the night chilled by the cool air, dysentery became the prevailing disease. On the other hand, when drought prevailed, we had fever alone to combat. The treatment sustained fully the malarious nature of the disease. Opium and its concomitant adjuncts had little control over the discharges, but if possible they were stayed by such means, a chill would set in followed by fever, to arrest which, quinine would be administered and the patient would recover as though no dysenteric symptoms had preceded it; but such a course would protract the case through several days; a matter of great importance, not only to the patient but the Company, inasmuch as the average expense of each man was five dollars a day. Where ninety out of one hundred were taken down with either dysentery or fever, within two weeks after arriving upon the Isthmus, it became a matter of the utmost importance to return the sick to their work in the shortest possible time. To this end we soon learned that quinine was as essential in cutting dysentery short as it was in accomplishing the same end in the treatment of the intermittent and remittent fevers—thus sustaining the opinion as to its malarious origin, instead of regarding the fever as a complication, as some would have it.

During a residence of five years at Fort Hamilton, R. I., I had frequent opportunities of observing and treating dysentery. This district is perhaps one of the most pernicious localities for miasmatic fevers in the vicinity of New York, and here I found dysentery as readily cut short by quinine as on the Isthmus. In 1859, epidemic dysentery prevailed to a considerable extent in Batavia and the surrounding towns in Genesee Co., N. Y., where I then resided. It proved very

fatal under the usual treatment, the patients sinking ultimately into a typhoid state. Here, as elsewhere, I found that quinine would bring the hæmorrhagic discharges to an early termination, and establish convalescence. Here dysentery was associated with a severe form of remittent, usually called typhoid fever, and which without the administration of quinine in many cases proved fatal.

From these observations thus briefly sketched, of the behavior of dysentery treated with and without quinine, together with the fact that it is always associated with some form of miasmatic fever, I have become satisfied that the agency of malaria as its cause is unquestionable. Its sporadic existence is not more ftequent or difficult to explain than that of intermittent fever.

Pathology of Dysentry.—Those who remember the papers I contributed some years ago to this Journal, know that I regard intermittent, remittent and yellow fever, as all having one common or malarious origin. Spring malaria produces intermittent; mid-summer malaria, remittent of a simple type; later in the season, gastric, bilious and typhoid symptoms complicate it, upon which may be engrafted the virulent malaria of yellow fever from southern climates. Such was the case at Fort Hamilton and Staten Island in 1856. But little intermittent had prevailed that spring, but in July a severe form of remittent set in, with marked gastric and bilious symptoms, upon which the yellow fever poison became engrafted and proved very fatal, except in cases where quinine was promptly and largely given on the first remission. Now these diseases are produced by a poison developed from inanimate matter, and that only, and therefore not contagious in any sense of the term. The same law and conditions pertain to dysentery, and when we add it, to the list, we have the principal malarial diseases grouped together.

Let us glance at the phenomena exhibited in the different forms of disease we have classed together as arising from a malarious origin. In simple ague—the type of all grades of fever—we have during the chill an exsanguinous surface, with engorgement of the lungs principally, and to a great degree suspension of the development of animal heat. In remittent fever, we find the lungs not so generally involved, but the liver, spleen and stomach take on the congestion from the receding venous currents. The symptoms are gastric and bilious, and the general constitution is more seriously affected. In that form of fever regarded by many writers as idiopathic-

ally typhoid, we have still less chill, with greater depression of the vital powers, and subsequent ulceration of Peyer's glands, indicating a still more deep-seated congestion in the early stages of the disease. In dysentery, the primary congestion or engorgement takes place near the terminal extremity of the intestinal tract—in the rectum and colon, and as these organs are not so important in nutrition, the constitutional symptoms are not usually so depressing or dangerous. In yellow fever, the primary engorgement involves almost every interior organ essential to organic life, especially the liver, stomach and intestinal tract. In extreme cases, unless the virulent poison of the malaria is early neutralized by quinine, the venous engorgement is not relieved, the vitality of the blood is suspended, and it transudes into the mucous cavities and is ejected from the stomach as black vomit.

A little careful reflection will show that in each form of disease referred to, the symptoms and constitutional effects are in perfect accordance and harmony with the lesion, and that their distinguishing characteristics are from local causes, rather than from any radical difference in the primary source —that dysentery is just as truly a malarial fever as intermittent, its widely different symptoms being the result of the lession, or seat in which the malarial poison takes effect. Why malaria in the spring should take effect principally in the chest; in the summer in the liver and stomach; and in the autumn in the small intestines or lower bowel, is more than I can tell, but the length of time the surface which eliminates the poison has been exposed to the sun before it becomes sufficiently dry to generate the malaria, seems to have much to do with it. In the former papers referred to above, I endeavored to show that vegetable decomposition in no case generates malaria, a conclusion which extended observation I believe will fully confirm.

Treatment of Dysentery.—Life in the camp is specially calculated to produce dysentery, or the local determination of blood to the lower bowels, when the primary cause is taking effect on the system. The hips are more frequently exposed to the ground, and without covering, than any other part of the trunk, while the recumbent posture upon the ground is most favorable to the inhalation of malarial poison. The soldier subject to such habits requires a treatment specially adapted to his situation. He should take nothing calculated to increase his susceptibility to change of temperature, nor to impair his vital forces. To equalize the circulation, instead of

abstracting by blood-letting from it, should always be the rule. No error in practice is more frequently advised in text-books than this of bleeding in dysentery. Fortunately, from necessity, it is generally, I believe, dispensed with in the camp. Bloodletting was never beneficial in diseases involving the mucous membranes, and its disuse is rapidly following a better knowledge of the pathology of dysentery.

Mercury is another remedy which has been highly esteemed in dysentery, from a confused idea that this disease was in some way a sequence of diseased condition, or deranged function of the liver. All careful observers will find the hepatic difficulty but an *effect* and not a *cause* in dysentery, as in all malarial fevers. The primary effect of malaria is upon the organic system of nerves, and hence the processes of nutrition are suspended. The liver being the largest secretory gland in the system, the effect in this organ is most apparent. Malaria serves to lock up all the secretions, and hence the true remedy is that which will neutralize this poison, when all the organs resume their functions and the system returns to health. The use of mercury in dysentery is not indicated by any condition of the disease, and in camp dysentery it cannot be too freely deprecated. Its effect upon the constitution when long continued is analogis to that of malaria—the destruction of red globules in the blood. It is irritating to the mucous surfaces when diseased, and serves no purpose that may not be attained by the most simple cathartic. Mercury and malaria cannot be endured in the same constitution without a two-fold injury to the vital powers. Bloodletting and mercury are good remedies when inflammation involves serous membranes, but when the mucous tissue is diseased, abstain from their use. The liver will take care of itself if the primary cause of the disease is properly attended to.

Alternate cathartics and opiates is a favorite course with the old physicians. I have seen a patient sink and die within three days from the effects of a cathartic, and this, too, after the physician had decided convalescence to be fully established. The practice which I have found pre-eminently successful consists mainly in the administration of powders composed of Ind. rhei, grs. ij.; opii and ipecac., aa gr. ss. In preparing these powders I triturate the ingredients thoroughly in a mortar, combining a little white sugar. When there is indication of acetous fermentation in the stomach and bowels, add a little sub. carb. soda. When there is obstinate constipation, increase the rhubarb; if the bowels are relaxed, lessen

it. If fever runs high, increase the ipecac. until nausea is produced. The rhubarb will work its way through the bowels and carry the opium to the seat of the disease, preventing the formation of scybala or the necessity of other cathartic remedies. When there is no fever at the commencement, I give quinine to the adult in four-grain doses, alternating with the above powder, every third hour. When there is well-marked pyrexia, wait until a distinct remission before giving the quinine; it should be continued until 16 to 20 grains are taken, or cinchonism is produced. With this simple treatment, commenced early in the disease, the great majority of cases will be cut short within forty-eight hours, and the patient may be permitted to go about his business. On the Isthmus a patient was seldom detained from his work more than one day from an attack of dysentery; and in simple ague he was merely required to report himself at the hospital before each meal, to take his quinine and go to his work regularly, in the majority of cases. The proportion of deaths to the whole number of cases on the Isthmus was very small, the statements of the secular papers to the contrary notwithstanding. The whole number during the first and second year was about 35. I have seen the number stated more than the whole number of persons, both native and foreign, ever employed upon the road from its commencement to its completion.

A wide-spread prejudice obtains with the public against the use of quinine, and many physicians do not seem to be much better informed upon the subject. It is as harmless, in producing any permanent constitutional effects, as capsicum. I have administered over a hundred ounces from first to last, without ever discovering any injurious effects from it. During the yellow fever epidemic at Fort Hamilton, L. I., and during and subsequent to an attack of that disease, I took about two hundred grains of it, and have never been in better health in my life than since. It should be remembered, however, that I was a month almost constantly breathing the poisoned atmosphere of that district, having no time to attend to myself as I did others, taking the remedy at hap-hazard as I felt the indications coming on. Quinine alone has no permanent effect in preventing the recurrence of fever. It simply neutralizes the poison of malaria for the time being. More permanent results were obtained from the use of the bark in powder, as administered before sulphate of quinine came into use. A concentrated preparation of the calisaya bark should always be used after breaking up a fever with quinine, in private or hospital practice.

The use of spirits by those subjected to a malarious atmosphere is exceedingly prejudicial. There are few constitutions that can bear up under the combined effects of malaria and strong drinks; fever is hastened and rendered less amenable to treatment by such practice. On the Isthmus this was most thoroughly tested, not only among the laborers, but with the people generally. Of the four deaths that occurred in my department, two of them were from this cause.

Many measures may be adopted by the physician or army surgeon not indicated here, for the relief of the patient suffering from dysentery; my object being to establish general principles for the "abortive" treatment of the disease, and not to dwell upon the minutiæ. If I have succeeded in calling attention to, and pointing out the way by which the miasmatic origin of dysentery may be recognized, I am confident that it will lead to a more speedy and successful treatment of this disease than that generally advocated by text-books and the profession.—*Bost. Med. Jour.*

VIRCHOW'S PATHOLOGICAL VIEWS.

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Virchow is an epoch-making author, and is justly entitled to the prefix great. His pathological doctrines mark the opening of an era during which they will lead the advance in that field of science. The existence of Virchow's "Cellular Pathologie" is well known, yet apparently but few of the medical world have examined into the purport of its contents. It consists of twenty lectures, which, in 1858, at Berlin, first came from the lips of Virchow. They are reported to have been very convincing to his auditors.

We are not about to present a summary of this volume, but merely a succinct exposition of certain of its portions. It contains but very little matter that, prior to the lectures, had not been presented by Virchow in other publications, and the student of medical science, *au courant* with the contributions made to its literature in Germany for the most recent ten

years, will find in the "Cellular Pathologie" but little entirely new or surprising; and in that literature must a fuller presentation of Virchow's researches and discoveries be sought for.* "Cellular Patholigie" imports a pathology in contradistinction to the humoral and solidistic pathology, from both of which it is sufficiently distinct, without, however, involving their entire rejection.

Cell Development.—The leading position of Virchow, contrary to the persuasion of the older pathologists, is in his understanding of the mode of cell-production and transformations. Starting from a denial of *free* cell-production, his explanation of the mode of formation of pathological tissues is directly at variance with the general view, which is, that free cell-production constitutes the mode of growth of all pathological formations.

The same view was also held undoubtingly with regard to the physiology of normal tissue-growth, until Kolliker made the covert suggestion "that it had been much too readily taken for granted. (*Microscopical Anat.*)

A brief sketch of the essential points of the doctrine of cell-production as they appeared from time to time in its history, rejected by Virchow, will enable those whose studies have not familiarized them with it, to understand Virchow's views of cellular growth, and his use of them in the field of pathology.

Raspail, in 1844, was the first to describe the morphology of the cell, and to give an account of the process of its formation, which he likened to crystallization. He described them as arising in "a liquid tending to organize." Raspail ascribed, therefore to the cell only an active capacity, while he ascribed to the fluid implied a formative or generative capacity, by which from itself the cells were formed. The latter idea became that of Schleiden and Schwann. But Raspail had done little more than theorize upon the observations which had accumulated in the era preceding him. We owe to Schleiden, the botanist, the first series of observations on which reposed the theory of cell-development.

He studied the process of cell-development as presented in the embryonic stage of vegetable growth. His first observations were upon the capsule which contained the albuminoid substance of the seed, and also the extremity of the pollen-tube, from which the embryonal growth arises. He repre-

* Virchow himself informs us of this; our acquaintance with his researches is recent.

sented that in both these points a solution exists which first assumes a turbid and then a granular aspect; nucleodi arise from the union of these granules at various points; next around these are found nuclei, (cytoblasts,) and subsequently the cells.

According to this account, the mode of production of the cells is the same as that of Raspail, though Schleiden spoke of its being "the formation of cells within cells;" yet, although the process took place within the large cell or embryonal sac, it is plain that each cell arose separately out of the fluid implied, and that no one of them took part in the reproduction of others. This process is what we now know as free cell-development, and this is the doctrine which Virchow rejects. Schwann followed Schleiden, and made his observations on the embryonic animal normal tissues. He had adopted Schleiden's theory of cell-production. In his examination of animal tissues, Schwann observed in the embryo innumerable cells reposing in a more or less consistent intercellular substance, and towards the production of these he entertained the idea previously announced by Schleiden. He thus assigned to the production of the cellular elements of animal tissues the doctrine Schleiden had alleged with reference to vegetable tissues. In his account of the processes subsequent to the origin of the cells, by which these are transformed into the structure, Schwann was entirely original.

This doctrine of the mode of cell origin in normal tissue was adopted by Johannes Muller in his classification of pathological formations and morbid growths. Muller led in showing that it is under the same law both normal and abnormal growths are developed; and relying upon Schwann's dictum respecting the origin of the cells, his own observations were with reference to the processes of their transformation into abnormal structure, or into degenerated morbid products.

The doctrines of Muller in pathology became those of Vogel, Lebert, Rokitansky, Paget and others. None of these reinvestigated Schwann's and Schleiden's doctries of cell-production, and their researches were limited to the investigation of the various stages of the transformation, by which morbid growths are formed out of cells after these had orginated from that blastema. But while the train of pathologists were accepting Schleiden unquestioned, and had accumulated their stores of observations in accordance with the erroneous presumption of free cell-production, the botanists, dealing with normal vegetable tissue, were diligently reinvestigating

cell-growth, and in 1844 Hugo Von Mohl brought forward his explanation of the formation of cells in the plant. He affirmed that the production of cells in plants occurred only in the cavities of other cells, (plant-cells.) He differed also materially in his account of the order of the formation of the cell, its nuclei and nucleolus, from that of Schleiden; "not the nucleolus appears first, he says, "but the nuclebs or cyto-blast." Von Mohl was soon followed by the investigators in animal tissues, who objected to other points of Schwann's teachings. At length, in 1852, Remak unreservedly rejected Schwann's doctrine of free cell-development, and announced the aphorism—"*Omnis cellula in cellula*"—which became the leading doctrine of Virchow, and the pedestal of the "Cellular Pathologie."

"*Omnis cellula e cellula.*"*

Virchow says, "Just as little as we can now admit that teniæ can arise out of saburral mucus, or that out of the residue of the decomposition of animal or vegetable matter an infusorial animalcula, a fungus or an alga can be formed, equally little are we disposed to concede in physiological or pathological histology, that a new cell can build itself up out of any non-cellular substance. Where a cell arises, there a cell must have previously existed, (*omnis cellula e cellula,*) just as an animal can spring only from an animal, a plant from a plant."

This doctrine supplants that of Schawnn; and although Virchow was not the first observer to propound it, yet he has brought to its illustration such a wealth of observation, and has applied it in such sweeping elucidation of the normal tissue and pathological formations, especially the latter, that he is fairly entitled to the credit of being its ablest expositor.

It will be evident that without vacating the theory of free cell-production from a formative substance, plastic lymph or cyto blastema, no radical or important change of our view of morbid products or pathological formations could have been attained to. The true production of the cells in the first instance, and the manner of the multiplication, and various transformations constituting the growth ot the tissues, was the most indispensable part of a correct understanding of either normal or pathological tissue development, and Virchow believes with Johannus Muller, that the law is similar for the growth of both these. Until the day of Virchow, the path-

* Virchow, Beit. Zur. Spec. Pathologie and Therapie., 1854.

ologists had supposed the various pathological or morbid developments to be in the first instance a blastema or plasma, exuded from the vessels of the diseased parts, and that this itself was developed by its own capacity into the cellular growth which constituted the new formations. The degeneration of the histological forms constituted the final stage of the morbid products, as pus, etc. It is the doctrine of blastema and cell-growth that Virchow displaces by substituting the histological elements, we shall now describe.

Says Kolliker, "free cell-formation is exceedingly frequent in pathological productions, and the cells in pus and exudations of all kinds arise in this manner; in fact, all pathological cell-formation properly comes under this head." (*Microscopical Anatomy.*)

According to Virchow, the great majority of all new pathological formations arise from the excessive and perverted growth of the corpuscles of the connective tissue. Each of these, individually, consists of the cell, its nuclei and nucleoli; the constructive process consisting in all growths, malignant or benign, of the division of their nuclei and their multiplication. Instead of new formations by free cell-development from plastic lymph or blastema of Schwann, or the exudation of the early pathologists, Virchow shows that these growths are constituted of the development of the cellular element of connective tissue; the "connective tissue corpuscle" therein being the active agent of the growth, and the connective tissue itself being the seat of formation. Virchow has shown that this connective tissue, with its cellular element, the "connecnective tissue corpuscle," abounds everywhere in the human body, and that it may be regarded as enmeshing all other histological elements. Its different varieties abound profusely in the brain, liver, kidney, muscles, cartilage, and even the skin and bone; and that whatever morphological changes its cellular elements undergo, they constitute the growth of pathological formations, which are but a development of the cells of connective tissue, or a degeneration subsequently of its elements.

The cellular element of connective tissue, "the plasmatic cell," is Virchow's own discovery, and he gives the first exposition of its nature and pathological relations.

Virchow affirms that all, or nearly all, the morbid formations arrise within the connective tissue by the perverted growth of these "plasmatic cells," and makes it evident how, by the abundance of this tissue everywhere in the body,

pathological formations of the same character arise in different organs, since the same producing cellular elements are equally present in the most widely separated organs.

But this being so, what is Virchow's view of connective tissue? for it is manifest that with our idea of this tissue, we cannot concede to it the functions he ascribes to it.

The histogenesis of connective tissue turns out to be related in the closest possible manner with pathological doctrine, and although recently other investigators had come to suspect that we must look to it for the growth of pathological products; yet, before Virchow, connective tissue was regarded as the most inoperative structure in the body, having none but passive properties. It was said to consist of white and yellow elastic fibres in close combination, with pigment and fat cells.

According to Schwann, the fibres of connective tissue are transformed from cells of the simplest form, which commence the process by assuming an elongated shape, thus fasten end to end, and gradually break up into fibres within *the body of the cell*, then splitting into distinct fibrils, so that each row of cells, thus mutually attached by their extremities, is developed into a bundle of connective tissue. The white fibrous bundles are sometimes described as non-cellular fibres, in very intimate conjunction with a homogeneous intercellular material, and sometimes as this very material, disposed in such a way as to present a fibrillated appearance, though not capable of separation into distinct fibrils. Notwithstanding connective tissue from the date of Schwann's researches has been the object of much investigation, Virchow was the first to give a complete and satisfactory account of its mode of formation and the character and history of its elements.

According to Virchow, the connective tissue consists of (1) white bundles; (2) elastic fibres; (3) the "connective tissue corpuscles" or cells and an intercellular substance, the same which Schwann reputed to be the blastema from which the cells were generated. The white fibres arise from the direct fibrillization of the intercellular substance, and while this is taking place some of the cells are transformed into elastic fibres, and others change to fat and pigment cells, recognized by histologists, while others of a spindle-shape, or more or less stellate, remain as a part of the tissue itself. The elastic fibres result from a peculiar change and sclerosis (hardening) of the walls of the cells, which terminate in a disappearance of the cell contents and the obliteration of their cavity. The corpuscles, sometimes fusiform, but more frequently star-

shaped, and joined by means of their branching prolongations, so as to form a net-work similar to that of the structure of bone, the corpuscles and and canaliculi of which Virchow asserts are really cellular, consisting of these very elements greatly transformed. As before said, while some of the embryonic cells are assuming their stellate, frequently anastamosing form and others becoming elastic fibres, the homogeneous intercellular substance becomes fibrillated, and the whole series constitute the connective tissue. By their capacity of division and multiplication, the "plasmatic cells" produce all pathological growths, whether malignant or benignant; the only distinction there is between these two being established by the kind of irritation or excitation in the part, to be explained further on. Instead, therefore, of finding the origin of new formations in plastic lymph, blastema, or organizable exudation from the blood-vessels and free cell-growth within it, Virchow substitutes for the plastic lymph, the blastema of the earlier and the plasmatic exudation of later authors, connective tissue, and especially its cellular element—"and directly traces to it the development of new formations, except epithelial formations and a few others." Virchow's doctrine, therefore, of the origin of pathological growths turns upon the fact that these cells have the function *or power of multiplying by division and originating broods of secondary cells*, in virtue of the irritation their subsequent action *supposes*, and that the developments of these cellular elements, with their outgrowths, or final degeneration, as in corpuscular lymph, pus, tubercle, constitute the vast majority of pathological formations, which are therefore growths of connective tissue. But it is not alone the cellular element of the connective tissue, but other parts of the tissue—the structural development of the cells—also undergo changes, degeneration, &c., &c.

But if the cellular elements of connective tissue are the active constituents of pathological processes, what is the inducing or exciting physiological cause of these processes? This, of course, is only to be sought in some relationship of these to external influences, and is found in the phenomena of irritability, induced when some cause of irritation acts either directly or indirectly through the medium of the blood upon the part, the normal state of which is thereby so altered, that it absorbs and attracts to itself from the parts around it a larger amount of matter than ordinarily.

Irritability.—Irritability pertains to the phenomenal history of every living thing, and "it is," Virchow says, "the very

criterion of life." "Vital activity is, in so far as we are able to judge, nowhere, in no part whatever, carried on by means allotted to it in the beginning, but we everywhere see that a certain excitation is necessary for its production;" and accordingly, whenever a particular action is called into play, we have to deal with a manifestation of the function, the nutrition, or the formation of any part.

Irritability, therefore, is distinguished by Virchow into functional, nutritive and formative, and either of these may alone exist, or they may coexist. The action of the elements of a part may, therefore, be displayed either in the promotion of its function, its nutrition, or its formation.

The first is displayed in the performance of the normal functions; a muscle contracts, or a gland secretes, although this may be excessive, and is then considered morbid. It is to be noticed that the influences which induce the functions are various, and are not indifferent. They operate under a law of specific relation or affinities between them and the elements of the parts.

Nutritive irritability is of much more interest to the pathologist than functional. It is manifest when the nutritive activity of parts is augmented, and is defined by the conditions in which there is an increase in the size of the cells of the affected part, but no *new formation* of the cellular or other histological elements. Thus, in Bright's disease, the renal peithelial cells enlarge merely by excessive nutritive absorption. Their contents become turbid, and the tubules broadened. "If we draw a thread through a cartilage so that merely a traumatic irritation is produced, we see that all which lies close to the thread becomes enlarged through an increased absorption of material."—P. 298. This turbidity of the cells of the part and increase of their dimensions constitute a form of corneal opacity.

Finally, formative irritability is exhibited in a marked multiplication of the constitutive elements. It follows nutritive irritability. In it, we find that the cellular elements, shortly after they have experienced the nutritive enlargement, exhibit further changes, which begin in the interior of the nuclei. The nucleoli become remarkably large, sometimes oblong, and sometimes staff-shaped. Then the nucleoli become constricted in the middle and assume the form of a finger-biscuit-like constrictions, and afterwards the real division of the nucleus, also take place. This may be repeated, so that three or four nuclei arise. If now we advance a step further in these

process, we come to the new formations of the cells themselves."—P. 310.

Groups of many cells arise by the continuation of this process from single ones; and in this mode of cell-production, and of these groups, consists morbid tissue growth. Their subsequent transformations and degeneration constitute the final form of the pathological product. Coincident with either of these forms of irritation may exist vascular or nervous disturbance, but they are never the inducing cause of them; "for," says Virchow, "all these forms of irritability may appear in parts not known to possess either nervous or vascular elements."

Inflammation.—In inflammation we have all three forms of irritation. In traumatic injury of muscle, for instance, we have nutritive and functional disturbance; and in inflammation of interstitial connective tissue, we have new formations and degenerations, pus, etc.

Inflammation divided.—There are two distinct forms of inflammation, but to Virchow there is no such thing as inflammatory exudation. The morbid product arising in the inflamed part is composed of material which has been generated there from the materials already there, and not deposited there from a separate source.

First, there is a purely *parenchymatous inflammation*, within the tissue, and presenting no free fluid. The cellular elements of the tissue are increased in dimensions and filled with abnormal matter. And, second, there is a *secretory* (*or exudative*) *inflammation*, belonging mostly to the mucous and serous surface. In these, the abnormal cellular product forms on the surface, attended with an increased amount of fluid.

That he has correctly conceived these cases, Virchow says, is shown by the fact that they occur in different organs. The *secretory inflammation* effects the formation of fibrin upon surfaces or in cavities, or the production of masses of mucus upon mucous surfaces; for just as the mucus is the product of the membrane carried out upon its free surface by means of the saline and watery matters of the blood, so also the fibrin, (or coagulable lymph,) instead of being a transudation from the blood-vessels, the work of vascular action, is a local product of those tissues on, and in, which it is found, and reaches the surface in the same way as the mucus of the mucous membrane.—P. 392. Absorption of the fibrin thus produced into the blood causes the increased quantity of fibrin there in inflammatory fever.

"The fibrinous crasis, therefore, is the product of local disease."

Instead of the cellular elements, *i. e.*, pus or mucous corpuscles, arising from the blastemas exuded, they are produced by the plasmatic cells, or areola tissue corpuscle of the seat of the inflammation.

"*Parenchymatous inflammation.*"—In parenchymatous inflammation, all the fluid transuded from the blood-vessels is absorbed by the cells of the parts involved, although the production of new elements may occur, or various degenerative changes may occur, (as fatty degeneration.)

The commencement of inflammation, therefore, is not in a peculiar action of the vascular or nervous tissue, but in that of the cellular elements of the part involved; and the hyperæmic condition of the vessels is not the cause of the local inflammation, but a consequence of the abnormal growth of the irritated elements of the tissues. Stop, or reduce the supply of blood, and you cut off the food which feeds their growth. "If," says Virchow, "we cut off or diminish the supply of nutritive matter, we must, of course, prevent the part from absorbing more than its wont."

Formation of Pus.—Virchow distinguishes two modes of pus-formation, according as pus proceeds from epithelial or from connective tissue.

If from the former, the pus-cells are produced by the multiplication of the cells of the younger strata of the epithelium, (*e. g.* the rete Malpighi of the skin.)

Says Virchow: "The more deeply-seated pus formations regularly take place in the *connective tissue.* In it, there first occurs an enlargement of the cells, (connective tissue corpuscle,) the nuclei divide, and for some time multiply excessively. This first stage is then very soon followed by divisions of the cells themselves. Round about the irritated parts, where before single cells lay, pairs or groups of cells are subsequently found, out of which a new formation of an homologous kind (connective tissue) usually constructs itself. More in the interior, on the contrary, where the cells were early abundantly filled with nuclei, heaps of little cells soon appear, which at first still preserve the direction and form of the previous connective tissue corpuscle. Somewhat later, we here find roundish collections, or diffuse infiltrations, in which the intermediate tissue is extremely scanty, and continually liquefies more and more in proportion as the proliferation of the cell extends.* After the abscess produced by such a process

*Cell. Pathologie, p. 451.

discharges, it is healed by granulations, for the formation of which it is essential that the intercellular substance should not be entirely liquefied. The difference between the suppuration and the granulation is, that in the former, the degenerative process exceeds the formative; while the reverse is the case in granulation. In the former, the intercellular substance, which is the nidus of the cells, liquefies and deprives them of further capacity of multiplication. It is an error, therefore, to attribute ulceration to the corrosive properties of pus.

"Pus is not the dissolving, but the dissolved, *i. e.*, the transformed tissue." The old structures heal up and disappear in the process of producing the new ones. The product of the cell multiplication takes the place of the previous tissue, and the ulcer will continue to increase in its size so long as this excessive cell-proliferation continues. The newly produced elements arise from prior ones which cause their structural character in the very act. So by a similar process in the production of morbid growths, the elements of the new growth arise out of the connective tissue corpuscle of the diseased tissue. Hence Virchow decides that "*there is a stage* when it is impossible to ascertain indubitably whether we have in a diseased part to deal with simple process of growth, or with the development of a heteroplastic form."—P. 454. For "the first development of cancer, of cancroid, and of sarcoma, exhibits the same stages; if the course of their development be traced sufficiently far back, we at last come across a stage in which, in the younger and deeper layers, indifferent cells are met with, which do not until a later period, according to the particular nature of the irritation to which they are exposed, assume the one or the other type."—P. 454.

In this view it is plain how microscopists have differed in the diagnosis of cancer.

Virchow classifies the new formation as heterogeneous and homologous; both, though they differ, are equally abnormal.

"Heterologous we may call not only malignant, degenerative neoplasms, but we may also thus designate every tissue which deviates from the recognized type of the part; whilst we should call all that homologous which, though new formed, still reproduces the type of its parent soil. Thus, the cells of pus are heterologous, because they differ from the normal parent cells by the proliferation of which they were produced; but tissues may be heterologous though they do not vary from physiological types.

"There is," says Virchow, "no other kind of heterology in morbid structures than the abnormal manner in which they arise, and that this abnormity consists either in the production of a structure at a point where it has no business, or at a time when it ought not to be produced, or to an extent which is at variance with the typical formation of the body."

Heterology, we are warned, must not be identified with malignity.

Malignity.—Cancer is malignant, not "because it contains heterologous cells, nor cancroid benignant because its cells are homologous; they are both malignant, and their malignity differs only in degree." For "(enchondromata) which were formerly described as unquestionably benignant, sometimes occur in soft, and rather gelatinous forms, which may occasion just such internal metastases as cancer."—P. 486. And sarcomata may "appear secondarily in the lymphatic glands, and in many cases occur throughout the whole body, metastatically, to much an extent that scarcely any organ is spared by them."—P. 487.

Morbid growths may infect other organs than where they arise in either of two ways. On the one hand, their cellular elements may pass into the blood, which rarely happens; or on the other, vitiated fluids of the part first affected may pass into the venous or lymphatic system, and reach some part where they may excite in the same action as occurred in their production.

A special blood disease giving rise to tumors is not admitted; but particular substances, it is admitted, may find their way into the blood, and induce particular morbid changes in individual parts by their being taken into them in virtue of a specific attraction between these parts and substances.

Very interesting to the surgical pathologist will be his account of the recurrence of certain morbific growths after extirpation.

"If we examine any proliferating tumor, of a cellular character, we often find from three to five lines beyond its apparent limits the tissues already in a state of disease, and exhibiting the first traces of a new zone. This is the chief source of local recurrence after extirpation, for it proceeds from the zone, that cannot be detected with the naked eye, beginning to grow in consequence of the increased supply of nutritive material, which results from the removal of the original tumor. No new deposit from the blood takes place there, but the new-formed germs, which already lie in the neighboring tissue,

run through their further development in the same manner that it would otherwise have taken place, or perhaps still more quickly."—P. 458.

But notwithstanding Virchow rejects the ordinary distinction of malignant and benignant tumors, and affirms the similarity of their source and of the character of their histological elements and their various transformations, yet he affirms that sooner or later there are differences, that the microscope can readily be applied to detect. Accordingly, he proposes that their classification be based upon their microscopic anatomy.

His views of the genesis of tubercle are peculiarly original. What we know as the miliary form alone is truly tubercular, with which, however, he classes the bodies found in the arachnoid, and which have been denied a tubercular character, because they contain cells.

Regarding these he says:

"You will generally find the tubercle in the brain described as being solitary, but they are not simple bodies; every such mass (tuber) which is as large as a small apple, (1 in.,) or even not larger than a currant, contains many thousand of tubercles. It is quite a nest of them, which enlarges not by the growth of the original form, but rather by the continual formation and adjunction of new foci at its circumference.

"If we examine one of these perfectly yellowish-white, dry cheesy tubera, we find immediately surrounding it a soft vascular layer, which marks it off from the adjoining cerebral substance, a closely-investing areola of connective tissue and vessels. In this layer lie the small young granules, ('miliary tubercles,') now in greater, now less number. They establish themselves externally, and the large tuber grows by the continual apposition of new granules, of which every one singly becomes cheesy."

But tubercle has its origin or growth in the cells of connective tissue; it is formed of a mass of cells rich in nuclei, by a process of cell-proliferation, similar to that for pus. It is distinguished from the latter, and also from the more highly organized forms of cancer, which are formed of large corpuscles, with highly developed nuclei and nucleoli. Tubercle is also developed out of the histological elements of connective tissue, by a process of degenerative cell-proliferation. By the profusion of its growth the nutritive supply is cut off, and then it shrinks and assumes its disintegrated cheesy state. But pus or cancer may undergo a similar metamorphosis, contrary to

Sebert, who believes the corpuscles found in the centre of tubercle "to be the first bungling products, unfortunate essays of organization." Virchow affirms that they are formed out of matured elements, by shriveling and fatty degeneration. When a large tubercle corpuscle is found, "a cell had previously existed," and similarly when they occur in cancer, which similarily undergo cheesy metamorphosis; they represent the degenerated form of cancer-cells and nuclei; and so pus also undergoes cheesy metamorphosis, and its corpuscles are shriveled pus-cells. In all these the ultimate character of the bodies is the same.

We come now to a subject which has been much discussed since the appearance of the "Cellular Pathologie." No pathologist before, since the time of Cruveilhier, who was the first to accurately describe the coagula found in blood-vessels, has found a satisfactory account of their origin and history. This Virchow does, in his doctrine of thrombosis, the process by which a coagulum of blood is formed within the vessel. According to Virchow, soon after the formation of these *thrombi*, their fibrin breaks down and becomes granular. The corpuscles lose their coloring matter, become crenated, and afterwards almost entirely disappear. A yellow-white, puriform liquid appears, in which the partially altered white corpuscles remain.

The fluid is not pus, although it appears so superficially; nor is the process suppurative, since it occurs in vessels in which no signs of inflammatory action are found. Thrombi may coexist with phlebitis; or, on the other hand, inflammation of the vascular walls "may unquestionably exist when the current of blood within the vessels of the affected part is perfectly free and unobstructed." But according to Virchow, in arteritis or phlebitis, the morbid products are formed in the walls of the vessel, and not in its calibre.

The thrombus is frequently confined to the seat of its origin extending as far as in the next large vessel, into which it empties; but frequently the deposition of layers of coagulum may prolong it beyond the mouth of the branch into the trunk, in the same direction with the current of the blood. Now portions of this may be detached by the current and carried into the general circulation, constituting emboli. If thus set free it will be carried along the venous channels to the heart, and thence proceeding in the pulmonary artery, will be detained in one of its branches. This detention will of course exclude the supply of blood to the tissues fed by the vessels.

It is from these data that Virchow accounts for these metastatic abscesses, which have been generally thought to dnnote pyemia.

"If," he says, "ulceration takes place in one of the valves of the heart, not by means of the formation of pus, but in consequence of an acute or chronic softening, crumbling fragments of the surface of the valve are borne away by the stream of blood, and reach with it far distant points, as the spleen, the kidneys, etc."

It is of course denied by Virchow that such metastases originate in the introduction and conveyance of pus in the blood. He denies its absorption; but he admits that corrupted juices may enter the blood, and lay hold upon certain points, for which the former has a special affinity. (See previous page.)

It is supposed by Virchow that in this latter way another class of metastases besides those attributable to emboli are caused. To this class belongs that metastatic pleurisy which develops itself without any metastatic abscess in the lungs and that seemingly rheumatic articular affection in which no distinct deposit is found in the joints; and further, that diffuse gangrenous inflammation of the subcutaneous tissue which cannot well be accounted for, unless we suppose a more chemical mode of infection.

Besides the foregoing, the volume entitled "*Cellular Pathologie*" gives the intimate anatomy and the physiological and pathological relations of the nervous system, and a classification of other normal tissues; the subject of nutrition; fatty, amyloid, and other forms of degeneration; while a large portion of it is occupied with an account of Virchow's observations of the process and transformations in growth of a normal kind, and these should be understood in order to estimate the value of the pathological doctrines. An analysis of these must be reserved for a future occasion, and opportunity recurring, we shall do our best towards a *résumé* of Virchow's observations in these departments, reserving until then any intimation of dissent. The doctrines can be invalidated only by deciding the incorrectness of the data upon which they are founded, and this is the province of the microscopist. If the data be true, the dissidence which has from the earliest dawn of medicine prevailed with regard to every feature of disease must disappear, and empiricism in pathology give place to the previsions and principles of science. We are ourselves in great measure, like Virchow's early auditors, convinced.

Comment upon the doctrines is valueless except by those who have an equal degree, if not extent, of proficiency with Virchow in pathological observations. We accord our conviction, that at no time has a volume in medicine with scientific pretensions at all to be compared to those of the "Cellular Pathologie" appeared. Nothing can exceed the easy mastery Virchow has shown over the details of all the subject, nor the evidence of ability to cope in a truly scientific manner with the great problems everywhere encountered on the field of pathology. At every step he has transcended the *rôle* of the mere observer with his barren accumulation of fact, and has given us their *rationale*. Few observers, especially in the world of medicine, ever seem to have had any conception that nature furnishes us with the facts or phenomena alone, and not the *philosophy* of them; *that* must be developed in the mind of the observer; the only difficulty in the case being, that the philosophy must be *that* of the facts, and not a philosophy or speculation discordant with them.

This service Virchow has competently striven to render to the scientific student, and he will probably stand hereafter as the first author in the long list of periods who has succeeded in doing in anything like the same degree or the same extent —a *scientific* work in pathology. He has signalized his difference in these respects from all other observers in the most fundamental way; passing, by dint of nice critical acumen, beyond the mere fallacious interpretation which so readily springs to the natural mind on the observation of facts, to that relationship between them which, once detected, furnishes the needed criterion of the truth or falsehood of the significance we at first sight assign to them.

Medicine, no less than pathology, is replete with such fallacies, and its professors must learn that philosophy as well as observation, intellectual resources as well as industry, are equally needed. Indeed, it is no more true that philosophy is at fault in medicine than it has been in natural history or mathematics. All the sciences equally receive their gains not from the mere collator of facts, but from the student of intellectual resources, who comes in the order of the method of discovery and investigation after the other, and employs his time and capacities in *using* the facts brought by the former. Whence now does he acquire his philosophy? Certainly not from the facts or phenomena given by nature, for these are solely the *subject* of his intellectual activity or life, but from some interior source, internal to himself, and

not furnished by any fact of nature. Of course, as we just said, his philosophy must involve the facts, and consequently presupposes them; but it *supposes* also an evolution of powers which belongs to him, and constitutes the difference between him and the mere collator of facts, whose apprehension of them may be proved, on analysis, to be a confusion, and whose bungling attempts at elucidation will be a blunder. Considered in this view as to the rank and importance of his work, we reaffirm our starting sentence, that Virchow has opened a new era in the science of pathology; and whatever modifications or corrections his work may undergo, they can be made in no other way than on the principles and by the methods he has himself so ably employed.

It is evident to us that the cellular pathology has given a new impulse to these investigations, and that it will induce nothing less than a very thorough revision of the present accounts of the histology of the animal tissues, and that in this work Virchow himself may be expected to go further than he has yet attained in the results of micrology. A single casual observation, induced by his account of the connective tissue of the body, has led to some results which, with improved optical means and appliances at our command, we hope to verify. Sufficient is known to justify the belief that the genesis of muscular fibrillæ will be found to be allied, with some modifications, to the formation of the connective tissue corpuscle.—*Am. Med. Monthly.*

EDITORIAL.

Rush Medical College.—We feel authorized in saying that the prospects of this long established and well known institution, were never more flattering than at the present time. Some little question, we understand, has arisen with reference to the appointment of Professors Blaney and Freer as Brigade Surgeons in the army. To avoid any misapprehension, we venture the following statement: The gentlemen mentioned will give their usual courses of lectures this winter as heretofore. Their appointment has especial reference to the establishment in this city of a great central military depot and hospital; to which latter all invalided and wounded soldiers will be conveyed and cared for, under their immediate supervision. The opportunity for clinical observation thus afforded, it will be seen, will be of the most superior character, in fact unapproachable elsewhere.

The peculiar salubrity of Chicago, as proved by statistics and general observation, has commended it to the Department as remarkably favorable for the establishment of a general military hospital, and thus the students of Rush Medical College will be supplied with means of clinical study of the very highest order.

Arrangements have also been made by which the dispensary department of the College will prove unusually rich and instructive.

In view of the foregoing facts, the friends of the institution are requested to correct the various injurious rumors which designing enemies of this College have set afloat for purposes easily to be surmised. We find it necessary to unearth the burrowing schemes of these unscrupulous and desperate foes, not only of the College, but of all *honorable and legitimate* medical teaching.

Ethical.—It is not in accordance with the code, or with ordinary gentlemanly business courtesy, for a practitioner called in a case of emergency, in the absence of the regular family physician, to assume the case unless he is distinctly informed that the usual attendant is discharged.

It is unnecessary for the transient physician thus summoned to call more than half a dozen times to ascertain how the patient is getting along. Poverty is an unpleasant incident of professional life, but scheming dishonesty and parasitic fawning and fulsome lavishing of unsought attention, are worse.

It is wholly needless for a man on donning the M. D. to slough off the gentleman. If the snake or other reptile predominates in your constitution, for heaven's sake put on a better looking skin when you shed the old one—code or no code.

The State Examining Board—Eight Dollars a Day, &c.—Nothing conduces to industry like good pay. Under the influence of this potent stimulus, or from a desire to "elevate the profession," the new Examining Board still continues its labors. Two candidates *per diem* emerge from their green room, either adorned with military feathers or "plucked," as the case may be. It is understood that large attention is paid to the sphenoid bone and nervous ganglia and plexuses; meanwhile one of the elect has signalized his advent to the medical staff of the grand army by anointing and poulticing a femoral hernia, mistaken for a bubo. It is God's mercy he did not put a lancet into it. It is understood he—(not the bubo or the surgeon,) but the patient—has his discharge from the army.

Seriously, is not this gross professional humbug about played out? The profession is to be congratulated that quite a number of well qualified and experienced gentlemen have been permitted by the Board to go into the service. *O si sic omnes!*

Shoulder Straps.—An angry controversy is raging which threatens to assume stupendous proportions. The majority of the newly appointed surgeons to the volunteer regiments have donned the shoulder straps of the *Majority*. To this the Medical Bureau of the regular service stoutly objects. The United States laws upon the subject are understood to place all officers in the volunteer service on a level in rank with those holding similar designations in the regular service, and bating the usual precedence of seniority, entitled to the same pay and emoluments. But the Medical Bureau, influenced by reasons readily to be surmised, cannot bear to have the *parvenues* of the medical volunteer corps come so nearly between the wind and their nobility. Hence they insist that a Brigade Surgeon shall rank only as a Major of Cavalry; a Regimental Surgeon as a Captain of the same, and assistants as Lieutenants. This simply degrades the volunteer surgeons below their legal peers in the regular service, and what is infinitely worse than the *hiatus valde deflendus* of shoulder "fixings"—despoils them of the pay of the superior rank.

We feel no hesitancy in saying that the volunteer surgeons will not only injure themselves, but permit a wholly unworthy slur to be cast upon the entire profession if they do not resist to the last extremity such a contemptuous encroachment on their legal rights. The pay of the medical service in the army is, in comparison with the duties involved, so pitiful that few can afford to undertake the position—certainly no gentleman of adequate ability and experience who has a family dependent upon him. That even this pittance should be illegally cut down, merits nothing but scorn in the attempt. We trust the "red tape" of the Department may not be permitted to strangle the patriotic vitality of the volunteer surgeons. Stick to your rights, Messieurs Surgeons of the army—including shoulder straps and all.

It may be received as an almost self-evident proposition that the medical practitioners of civil life, in this country, have had immensely greater experience than those who, what-

ever their original qualifications, have been isolated with the little squads of the regular army, during the long years of peace the country has been favored with. Self-respect, if nothing else, should prevent the former from accepting the inferior position so arrogantly in defiance of the law thrust upon them.

The officers of the army usually are gentlemen, and will favor the medical officer in insisting upon his appropriate position. Let it be done.

We cannot resist the inclination to insert, right here, words of well deserved praise and honor to certain volunteer army surgeons who *did not run* from the battle field. The comment suggests itself—Shall such surgeons be deprived of the pay and position of gentlemen?

"*Cowards—A contrast.*—That the men of Varian's Battery can live in New York is a disgrace to civilization. Future historians will point to the popular disregard of such an awful crime as the sharpest evidence of the depth of demoralization to which we had attained before the revolution which must be impending on us as its necessary result. There is enough of Buncombe receptions, but of real appreciation of true heroism how much do we see?

Two men return to New York to-night who are in the truest use of the words heroes.

These are the Surgeons of the Eighth New York Regiment, whose officers deserted, in many cases, before coming under fire. They were in the Sudley church; they arrived at it amidst the hottest rush of the mad panic, but stopped to aid in taking care of the wounded, who had been placed for shelter in it. They were warned that the enemy was approaching; they heard the cry that the enemy was bayoneting the wounded and giving no quarter; they were advised to leave by a United States regular officer, who told them that the enemy would undoubtedly shell the church on the supposition that it would be held as a defensive position as long as possible by our troops covering the retreat. This conviction was so strong with those who left last, as you will remember, that it was generally reported that the church was shelled, and I have heard a man declare that he saw it shelled. But these sur-

geons said, simply, "We cannot leave these bleeding men; it is our business to take care of them, and take care of them we must, no matter what comes of us." They unquestionably made up their minds to die, and momentarily expected the falling of the first shell among them, until, while in the midst of an amputation, there was a rush of cavalry, and a horseman's pistol was pushed in at the door, and a hoarse voice asked, "Do you surrender?"

"Certainly," answered Swift, tying an artery, and not so much as raising his head from his business.

Would to God we had a few score such men as Captains, and would to God we had a General who would blow from the cannon's mouth such sham officers as those who played soldier with the Fire Zouaves and the Eighth, and such vermin as those of Varian's."—*N. Y. Times.*

Chlorate of Potash Again.—Some of the correspondents of the medical journals are raising the question of priority in the use of chlorate of potash in mercurial ptyalism, etc. The single fact is, it is an old remedy revived and, as usual, amplified and glorified. We have known it as a common remedy for mercurial salivation, stomatitis materna, scarlatina anginosa, etc., etc., for more than twenty years, and as far back as we can recollect in medicine it was by no means considered a new remedy. The priority does not rest with this generation.

IS PRIMARY CHANCRE EVER A DERIVATIVE OF SECONDARY SYPHILIS BY INOCULATION?

Messrs. Editors:

Having recently under my observation a case, whose history seems to afford an affirmative reply to this grave question, I propose to give a brief outline of it to your readers, hoping that such an account may elicit corroborative facts from the experience of my professional brethren.

Early in April last, the patient, a young lady, in excellent health at the time, noticed a "cold sore" upon her under lip. It presented no unusual appearance and no application was

made to it until about ten days from its commencement, when its indisposition to heal, and the swelling at its base gave rise to some degree of apprehension on the part of the patient. About the same time the cervical glands began to enlarge and were painful, the mucous membrane of the fauces was red and "raw," and the patient was unable after a time to swallow any other than the blandest fluids. The lower lip became largely swollen and everted, the base of the sore extensively indurated—its surface secreting in small quantities a thin unhealthily appearing pus. No local applications of which every variety was tried, were of the slightest avail toward ameliorating the condition either of the lip or of the throat.

In May, her state was truly deplorable, the surface of the body being here and there studded with an eruption, dry and scaly, and her general appearance indicating a deeply seated cachexia. During the second week in May she began to take the Proto Iodide of Mercury, and from that time her improvement was continuous and rapid.

By the 1st of June—not quite three weeks from the first administration of the mercurial, the lip was entirely restored, but a slightly marked cicatrix remaining and that not perceptibly indurated. Her throat also was well, the cervical glands reduced to their natural size and the skin clear and free from any eruption. She then took Iron in Huxham's tincture for several weeks with benefit to her general health and strength.

About the 1st of August, she noticed a slight renewal of the eruption, upon the face, scalp and extremities, but this vanished again under the use of the Bichloride of Mercury.

Few professional men, I think, would have, under these circumstances, entertained a doubt as to the specific character of the disease. The indurated base of the disease, the affection of the throat and skin, the well-marked cachexia, and finally the immediate and curative influence of the mercurials seem to furnish indubitable evidence to the correctness of my assumption.

In the course of my painful investigation with reference to the origin of the evil, I ascertained that the patient was engaged to be married to a young gentleman, who was and is now suffering from secondary Syphilis, his throat having been for a period of six months, from time to time the *locale* of extensive and characteristic ulcerations.

The evidence and testimony in the case, not to particularize, are convincing to my mind, that none other than the most proper and customary intercourse has ever existed between these parties, and accordingly I fully believe that the patient, by the contact alone of lip with lip, has received into her system the syphilitic virus—in short, that from the products of secondary ulceration a primary chancre in this case resulted by inoculation.

"AB UNO, DISCE OMNES."

Remarks.—The above was received too late for insertion under the appropriate head. Aside from the question which must ever remain undecided, save to the minds of those who have the immediate personal cognizance of such cases and have necessarily individual "generous confidence," there arises the query whether the inoculation might not after all have been of *primary* syphilitic virus. The modes in which this might occur will suggest themselves to any one who has observed a case of gonnorrhœal ophthalmia. Again primary syphilitic ulceration of the throat is a condition which must be recognized as occasional, and as well established as the occurrence of bubo.

The important interrogatory proposed by our correspondent can only be solved by the production of primary chancre by direct inoculation with the products of secondary syphilitic ulceration. Thus far we have no confidence in the result of experiments.

In the particular case above given the acute observer who furnishes the record, we have every reason to believe, could not have been mistaken as to the nature of the disease of the lip.

Lectures on the Diagnosis and Treatment of the Principal Forms of Paralysis of the Lower Extremities.—By E. Brown Sequard, M. D., F. R. S., &c. Pp. 118. Price $1.50.

Course of Lectures on the Physiology and Pathology of the Central Nervous System.—By the same. Pp. 276, with plates appended. Price $2.25.—Both from the Publishers, J. B. Lippincott & Co., Philadelphia, per S. C. Griggs & Co., Lake street, Chicago.

The pressure of other duties upon our time since the reception of the above works, has prevented our noticing them in detail, as we intend speedily to do. Meanwhile, in announcing them to our readers, we feel confident that they will hail their appearance with great pleasure. No physician who wishes to know anything about the nervous system, in health or disease, should fail to secure them at once. They are invaluable. In whatever particular individuals may differ from the author's conclusions, the perfection of his experiments and observations must everywhere be conceded. In this particular department of physiology, Brown Sequard stands second to no living observer, and certainly he describes what he has seen with a clearness and precision which renders it a rich treat to read his writings. But "more anon."

Graduate of Rush Med. College.—The name of W. Bates, M. D., of Ransom Centre, Mich., was inadvertently omitted from the list of graduates of Rush Med. College in the March number of this JOURNAL and the Annual Announcement. Dr. Bates is a gentleman of fine scholarship and an honor to any institution as an alumnus.

Medical Director.—Dr. J. K. Barnes has been attached to the staff of Maj. Gen. Hunter as Medical Director. It is an appointment eminently fit to be made, and will inspire general confidence in the medical corps of the army of the Northwest.

BELLEVUE HOSPITAL MEDICAL COLLEGE, NEW YORK.

ANNOUNCEMENT FOR 1861-2.

THE Trustees and Faculty announce, with much pleasure, the organization of this College, with a corps of thirteen Professors, and a full course of Lectures during the next autumn and winter.

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N. R. MOSELY, M.D., Prosecutor to Chair of Surgical Anatomy.
SYLVESTER TEATS, M. D., Prosecutor to Chair of Operative Surgery, and Surgical Pathology.

PRELIMINARY TERM.

A preliminary term will commence on Wednesday, Sept. 18, 1861, and continue until the beginning of the regular term. In addition to daily instruction in the hospital wards, and clinical lectures, at least three lectures will be given daily on subjects of practical importance, by members of the Faculty, during this term. Among the subjects which will be taken up during the preliminary term are the following:—Organic Affections of the Uterus, by Prof. Taylor;—Uterine Displacements, by Prof. Barker; Inflammatory Diseases of the Uterus and Appendages, by Prof. Elliot; the Thoracic Viscera, by Prof. Childs; Auscultation and Percussion, by Prof. Flint; Syphilis, by Prof. Hamilton; Surgical Affections of the Genito-Urinary Apparatus, by Prof. Wood; Endosmosis and Exosmosis, with their Practical Applications, by Prof. Doremus.

The attention of students and practitioners is invited to the variety and practical importance of the subjects which will be treated of during the preliminary term. Although attendance is not required on the part of the student, it is designed to render this term not a nominal, but an actual extension of the period of instruction.

Dissections may be prosecuted during this term as well as during the whole of the regular term.